Environmental Assessment of Construction of a Security Perimeter Road and Fence Grand Forks AFB, North Dakota

April 2005

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
APR 2005		**00-00-2005 to 00-00-2005**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Environmental Assessment of Construction of a Security Perimeter Road and Fence at Grand Forks AFB, North Dakota	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **e2M Inc,4215 Walney Road, Suite 4,Chantilly,VA,20151**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The 319 ARW has determined that it is necessary to upgrade the existing security perimeter road and a portion of the security perimeter fence at Grand Forks AFB. The Proposed Action is needed to improve operations and security at the Base, ensuring that unauthorized entry is controlled via an adequate perimeter fence system, and that Security Forces personnel can access all segments of the Base defensive perimeter, at all times, on a safe, functional, perimeter road. The Proposed Action includes replacing approximately 4.2 miles of three-strand barbed wire perimeter fence at the northern end of the airfield, and upgrading the entire length of the existing perimeter road. Approximately five low-water wetland crossings would be constructed and one culvert would be installed. This EA has been prepared to evaluate the Proposed Action and alternatives, including the No Action Alternative, and to aid in determining whether an Environmental Impact Statement (EIS) is needed. Resources that are considered in the impact analysis are geological resources, water resources biological resources, and cultural resources. The EA will be made available to the public upon completion.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**157**	

ABBREVIATIONS AND ACRONYMS

319 ARW	319th Air Refueling Wing
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
APE	Area of Potential Effect
AQCR	Air Quality Control Region
ARPA	Archeological Resources Protection Act
AT/FP	Anti-Terrorism/Force Protection
ATV	All Terrain Vehicle
BASH	Bird/Aircraft Strike Hazard
BAT	Best Available Technology
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CEQ	Council on Environmental Quality
CES/CEV	Civil Engineer Squadron/ Environmental Engineer Flight
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DOD	U.S. Department of Defense
e²M	engineering-environmental Management, Inc.
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPCRA	Environmental Planning and Community Right to Know Act.
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FICON	Federal Interagency Committee on Noise
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FWS	U.S. Fish and Wildlife Service
FY	Fiscal Year
GFAFB	Grand Forks Air Force Base
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
HSWA	Hazardous and Solid Waste Amendments
HUD	Housing and Urban Development
INRMP	Integrated Natural Resources Management Plan
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MOU	Memorandum of Understanding
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NDNHP	North Dakota Natural Heritage Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NWP	Nationwide Permit
PCBs	Polychlorinated biphenyls
PCN	Preconstruction Notice
PPA	Pollution Prevention Act
ppm	parts per million
PSD	Prevention of Significant Deterioration
RAMS	Random Antiterrorism Measures
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendment and Reauthorization Act
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Office
SOP	Standard Operating Procedure
USAF	United States Air Force
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
AND
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)

CONSTRUCTION OF A SECURITY PERIMETER ROAD AND FENCE
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

INTRODUCTION

The 319 Air Refueling Wing (319 ARW) of the United States Air Force (USAF) has proposed to upgrade the existing perimeter road along its entire length (approximately 9.2 miles) and replace approximately 4.2 miles of three-strand barbed wire perimeter fence at Grand Forks Air Force Base (AFB). The Proposed Action, an Alternative Action, and the No Action Alternative were assessed in the attached Environmental Assessment (EA), which is incorporated by reference. Grand Forks AFB is a USAF base within the Air Mobility Command (AMC). The 319 ARW, which serves as the host wing, maintains its mission as the first core refueling wing in the AMC, and guarantees global reach and extended range in the air. The host unit is comprised of a Maintenance Group, Mission Support Group, Medical Group, and Operations Group.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to enhance Base security and personnel safety through the improvement of the perimeter road and the installation of a perimeter fence. Security Forces personnel should be able to access the Base perimeter to ensure the security of the Base to protect against the threats of global terrorism. As the perimeter road is currently unpaved in places, some areas are susceptible to damage and rutting from vehicular traffic including all-terrain vehicles and full-size trucks. The Proposed Action is needed to improve operations and security at the Base; ensure that unauthorized entry is controlled via an adequate perimeter fence system; and ensure that Security Forces personnel can access all segments of the Base defensive perimeter, at all times, on a safe, functional, perimeter road, while minimizing damage to natural resources.

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action involves replacing approximately 4.2 miles of perimeter fence at the northern end of the airfield, as well as upgrading the entire length (approximately 9.2 miles) of the perimeter road at Grand Forks AFB. The existing three-strand barbed-wire fence will be demolished and replaced with a 7 foot chain link fence topped by three strands of barbed wire. Heavy equipment will be used to install the fence and associated posts. The posts will be 12 feet long and will be pushed into the ground approximately 4 to 5 feet to ensure a sturdy fence.

Upgrading the perimeter road involves grading the top 3 inches of soil on the existing road bed, as well as adding and compacting clay soil fill as needed to build up the road to a width of 12 feet. After grading the road bed, a gravel overlay approximately 6 to 8 inches deep will be installed providing proper compaction and drainage.

A culvert consisting of two 12-inch diameter pipes will be installed under the southwest section of the perimeter road and fence to allow for the normal flow of drainage water. Wetlands exist along the road site, and during wet conditions, the road is impassable. Wetland low-water crossings will be constructed in various locations along the perimeter road, as necessary, to minimize the impact from patrol vehicles, as well as maintain wetland hydrology in these areas.

ALTERNATIVE ACTION

The Alternative Action would involve the same fence replacement, as well as culvert and low-water wetland crossing installation, as described under the Proposed Action. However, under the Alternative Action, the entire road would be excavated, a 40-foot area (20 feet on either side of the fence line) would be graded and compacted, and a new gravel road would be constructed approximately 20 feet from the inside of the fence line.

This alternative would result in greater disturbance in general, and would impact approximately five times the wetland area, when compared to the Proposed Action. Therefore, it was not selected.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the perimeter fence and road at Grand Forks AFB would not be upgraded. The 4.2 mile segment of the existing perimeter fence would continue to be three-strand barbed wire. This fence does not provide adequate security, and would continue to be vulnerable in the future and impede force protection assessments.

The perimeter road runs inside and outside of the perimeter fence, which requires Security Forces personnel to move physical barricades and unlock and lock gates. The perimeter road is deteriorating, rough, and overgrown with vegetation in most places, and even non-existent in some locations. During and after inclement weather events, such as snow or heavy rain, the road is impassable in certain locations, especially where it crosses wetlands. Under the No Action Alternative, all of these conditions would continue to preclude Grand Forks AFB from achieving adequate security through physical barriers and routine perimeter patrols. Therefore, it was not selected.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

Analysis of the Proposed Action indicates that the affected environment would not be significantly impacted by proceeding with the proposed perimeter road and fence construction. However, small segments of the road do pass through wetland areas and a small portion of the fence lies in the 100-year floodplain of the Turtle River.

Wetlands. Under the Proposed Action, construction activities associated with upgrading the perimeter road and replacing a portion of the perimeter fence, including demolition of the existing fence, have the potential to affect wetlands.

However, erosion and sediment controls will be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site. Construction contractors will adhere to best management practices in the Spill Prevention, Control, and Countermeasures Plan for Grand Forks AFB. The low-water crossings being installed in the wetland areas are intended to maintain normal hydrology in these areas and provide a surface for Security Forces personnel to cross without damaging the wetlands, protecting the wetlands over the long-term.

In addition, staff at Grand Forks AFB has determined that installation of the culvert under the Proposed Action would allow water to flow on-Base that would eventually create a wetland area to the north-northeast of the culvert. The Proposed Action is expected to impact approximately 1 acre of wetland, while approximately 1 acre of wetland should be enhanced as a result of mitigation. This would be considered compensatory mitigation for any wetland losses associated with the Proposed Action. Therefore, implementing the Proposed Action will result in no net-loss of wetlands.

Floodplains. Although none of the existing perimeter road actually lies in the 100-year floodplain of the Turtle River, approximately 165 feet of the perimeter fence to be replaced does lie within this floodplain. Under the Proposed Action, this section of fence will be upgraded in the same manner as the rest of the road. All practicable measures to preserve the natural values of the floodplain will be implemented for the project. There will be no negative impacts on floodplain functions and values or threats to human life, health, and safety.

PUBLIC REVIEW AND INTERAGENCY COORDINATION

Based on the provisions set forth in the Proposed Action, all activities were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate Federal, state, and local agencies. The EA and Draft FONSI/FONPA were made available to the public for a 30-day review period. No public comments were received. Comments received from federal and state agencies were incorporated into the final EA.

FINDINGS

Finding of No Practicable Alternative. Considering the information contained herein (including the attached Environmental Assessment), in accordance with Executive Order 11988, *Floodplain Management*, Executive Order 11990, *Protection of Wetlands*, and pursuant to the authority delegated by the Secretary of the Air Force Order 791.1, I find that there is no practicable alternative to completing the Proposed Action within the 100-year floodplain and within wetland areas. Security requirements mandate a perimeter fence and road be constructed to adequately protect the personnel and resources of Grand Forks AFB. The Proposed Action, as designed, includes a wetland mitigation area as well as all practicable measures to minimize harm to wetlands and to minimize harm to and within floodplains.

Finding of No Significant Impact. After review of the EA prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations, and Environmental Impact Analysis Process (EIAP), 32 Code of Federal Regulations 989, as amended, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment and, therefore, an Environmental Impact Statement (EIS) does not need to be prepared.

DEL EULBERG
Brigadier General, USAF
Director, Installation & Mission Support

14 Apr 05
Date

Attachments: Environmental Assessment

COVER SHEET

ENVIRONMENTAL ASSESSMENT OF CONSTRUCTION OF A SECURITY PERIMETER ROAD AND FENCE AT GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

Responsible Agencies: 319th Air Refueling Wing (319 ARW), Grand Forks Air Force Base (AFB), North Dakota.

Affected Locations: Grand Forks AFB, Grand Forks County, North Dakota

Proposed Action: Construction of a Security Perimeter Road and Fence at Grand Forks AFB, North Dakota.

Report Designation: Environmental Assessment (EA)

Written comments and inquiries regarding this document should be directed to The Environmental Assessment Contractor–Mr. Daniel Savercool, Project Manager, engineering-environmental Management, Inc., 3949 Pender Drive, Suite 120, Fairfax, Virginia 22030.

Abstract: The 319 ARW has determined that it is necessary to upgrade the existing security perimeter road and a portion of the security perimeter fence at Grand Forks AFB. The Proposed Action is needed to improve operations and security at the Base, ensuring that unauthorized entry is controlled via an adequate perimeter fence system, and that Security Forces personnel can access all segments of the Base defensive perimeter, at all times, on a safe, functional, perimeter road.

The Proposed Action includes replacing approximately 4.2 miles of three-strand barbed wire perimeter fence at the northern end of the airfield, and upgrading the entire length of the existing perimeter road. Approximately five low-water wetland crossings would be constructed and one culvert would be installed.

This EA has been prepared to evaluate the Proposed Action and alternatives, including the No Action Alternative, and to aid in determining whether an Environmental Impact Statement (EIS) is needed. Resources that are considered in the impact analysis are geological resources, water resources, biological resources, and cultural resources. The EA will be made available to the public upon completion.

Privacy Advisory

Your comments on this EA are requested. Letters or other written comments provided may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.

ENVIRONMENTAL ASSESSMENT OF CONSTRUCTION OF A SECURITY PERIMETER ROAD AND FENCE

GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

AIR MOBILITY COMMAND
Environmental Planning Branch
507 Symington Drive
Scott Air Force Base, IL 62225-5022

APRIL 2005

ENVIRONMENTAL ASSESSMENT OF
CONSTRUCTION OF A SECURITY PERIMETER ROAD AND FENCE AT
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

TABLE OF CONTENTS

SECTION **PAGE**

APPENDICES

LIST OF FIGURES

FIGURE **PAGE**

LIST OF TABLES

TABLE **PAGE**

1. Purpose of and Need for Proposed Action

This section includes five subsections: a brief background description of the Proposed Action, a statement of the purpose of and need for the Proposed Action, the location of the Proposed Action, a summary of the key environmental compliance requirements, and an overview of the organization of this Environmental Assessment (EA).

1.1 Background

Grand Forks Air Force Base (AFB) in North Dakota (Figure 1-1) is a United States Air Force (USAF) Installation under the Air Mobility Command (AMC). The 319th Air Refueling Wing (319 ARW), which serves as the host wing, maintains its mission as the first core refueling wing in the AMC, and guarantees global reach and extended range in the air. The host unit is comprised of a Maintenance Group, Mission Support Group, Medical Group, and Operations Group.

Other tenant units include Detachment 320 Air Force Office of Special Investigations, the Great Plains Area Audit Agency, 373 Training Squadron, Department of Defense Commissary Agency, Defense Investigative Services, and the Area Defense Counsel. There are approximately 2,624 military and 347 civilian employees at Grand Forks AFB.

The events of September 11, 2001, significantly changed the Nation's homeland security posture. Terrorism is a clear and present danger to the United States. The USAF's heightened security posture is expected to remain in place indefinitely. As a result and in furtherance of anti-terrorism/force protection (AT/FP) objectives, AMC has proposed that initial AT/FP improvements at Grand Forks AFB would be realized through the construction of the perimeter road and fence.

Grand Forks AFB is surrounded by 15 miles of perimeter fencing. Additionally, the airfield at Grand Forks AFB is surrounded by a separate airfield security fence that consists of a 7-foot, 9-gauge galvanized chain-link fence with three-strand barbed wire. Fencing serves as a legal and physical demarcation of a boundary, and is installed for any given use depending on the level of protection desired to prevent unauthorized entry. Approximately 11 miles of the existing perimeter fence consist of a 10-foot, 9-gauge galvanized chain-link fence with brown rubber coating that was installed during previous fencing projects completed in Fiscal Years (FYs) 1999 and 2001. The remaining 4.2 miles of perimeter fence consist of a three-strand barbed-wire fence. A vulnerability assessment conducted in 2003 indicated that this barbed-wire fence at the northern end of the airfield does not provide adequate security and must be replaced.

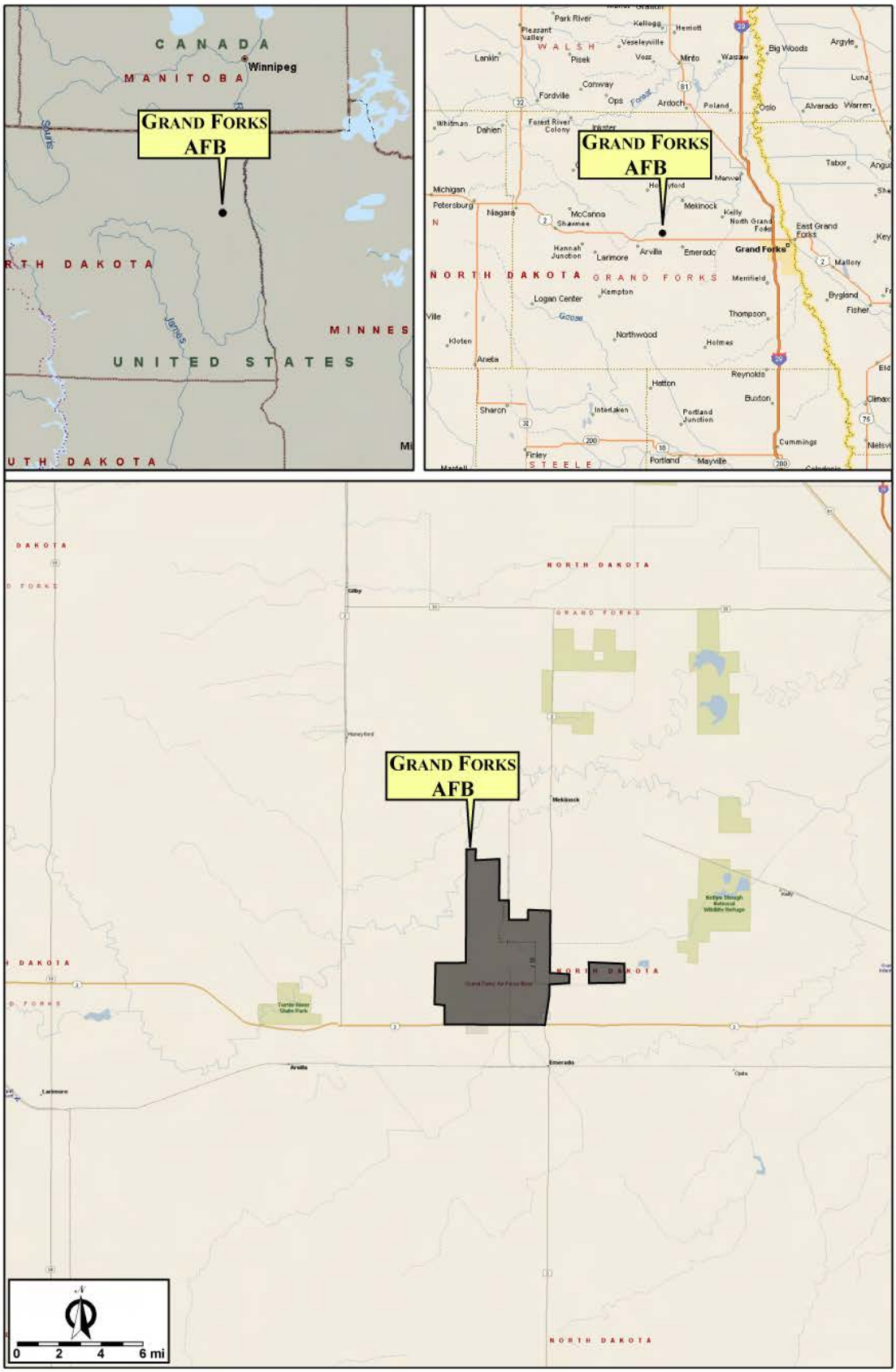


Figure 1-1. Grand Forks Air Force Base Location Map

Perimeter roads allow Security Forces personnel to access the perimeter fence for regular surveillance patrols. These patrols are required at least twice daily at Grand Forks AFB, and must consist of an "eyes-on" inspection along the full length of the fence. With the addition of Random Antiterrorism Measures (RAMS) and Surge Posting (random measures to defeat any covert or overt actions against the Base) there is also a need to increase the number of perimeter patrols. Also, during times of increased Force Protection conditions (when an increased and more predictable threat of terrorist activity exists) the number of perimeter road patrols increases exponentially. Currently, the perimeter road is deteriorating, rough, and overgrown with vegetation in most places along its 9.17-mile length. It is nonexistent in some locations. During and after inclement weather events, such as snow or heavy rain, the road is impassable in certain locations, especially where it crosses wetlands. In addition, the perimeter road alternates between the inside and outside of the perimeter fence, in which case, locked gates and physical barricades are provided. However, the Security Forces personnel at Grand Forks AFB are not equipped to move these barriers, forcing them to perform a portion of the duties both inside and outside of the Base perimeter. All of these conditions pose a hindrance to the regular surveillance patrols required at Grand Forks AFB.

In response to these circumstances, Security Forces personnel at Grand Forks AFB have requested that the perimeter fence and road be upgraded to ensure adequate security at the Base. As part of the decisionmaking process, the AMC and Grand Forks AFB are conducting an environmental analysis to determine the potential environmental impacts of this Proposed Action. The Proposed Action involves removing 4.2 miles of existing fence, replacing it with a 7-foot-tall chain-link fence topped with three strands of barbed-wire and upgrading the road to allow passage around the entire Base and installing appropriate drainage features and wetland crossings.

This EA analyzes the Proposed Action and alternatives, including the No Action Alternative. If the analyses presented in an EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. If the analyses presented in the EA indicated that there are no viable alternatives that would not affect wetlands or floodplains a Finding of No Practicable Alternative (FONPA) would be prepared in addition to a FONSI. A FONSI briefly presents reasons why a Proposed Action would not have a significant effect on the human environment or other features of the natural environment and why an Environmental Impact Statement (EIS) is unnecessary. If significant environmental issues result that cannot be mitigated to insignificant, an EIS would be prepared or the Proposed Action would be abandoned and no action would be taken.

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to enhance Base security and personnel safety through the improvement of the perimeter road and the institution of a perimeter fence. The Proposed Action is needed to improve operations and security at the Base; ensure that unauthorized entry is controlled via an adequate perimeter fence system; and ensure that Security Forces personnel can access all segments of the Base defensive perimeter, at all times, on a safe, functional, perimeter road, while minimizing damage to natural resources.

1.3 Location of the Proposed Action

Grand Forks AFB is in eastern North Dakota; approximately 15 miles west of the city of Grand Forks (see Figure 1-1). The Base occupies portions of Mekinock and Blooming Townships near the town of Emerado, North Dakota. It lies in central Grand Forks County, which occupies approximately 1,438 square miles and extends approximately 45 miles west from the Minnesota-North Dakota state line. Grand Forks AFB encompasses approximately 5,439 acres, of which 4,830 acres are owned by the USAF, while the other 609 acres are lands containing easements, permits, and licenses.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Section 4321-4347) is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. NEPA mandated a structured approach to environmental impact analysis that requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR), Parts 1500-1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee Federal policy in this process. To this end, the CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to

prepare an EIS or a FONSI, aid in an agency's compliance with NEPA when an EIS is unnecessary, and facilitate preparation of an EIS when one is necessary.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is the *Environmental Impact Analysis Process (EIAP)*, 32 CFR 989, as amended.

1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively." Resources that will be analyzed in the EA were those identified as being potentially affected by the Proposed Action, and include applicable critical elements of the human environment whose review is mandated by Executive Order (EO), regulation, or policy (see Appendix A).

1.5 Interagency Coordination and Community Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. CEQ regulations implementing NEPA specifically state, "There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process shall be termed scoping." The Intergovernmental Coordination Act and EO 12372, Intergovernmental Review of Federal Programs, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. Air Force Instruction (AFI) 32-7060 requires the USAF to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination and implements scoping requirements.

Through the IICEP process, USAF will notify relevant Federal, state, and local agencies of the action proposed and provide them sufficient time to make known their environmental concerns specific to the action. The IICEP process provides the USAF the opportunity to cooperate with and consider state and local views in implementing this Federal proposal. Upon receipt, agency responses are incorporated into the analysis of potential environmental impacts performed as part of the EA. The USAF will coordinate with agencies such as U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); State Historic Preservation Office (SHPO); and other Federal, state, and local agencies. In addition, the EA was made available for a 30-day public comment period to solicit the input of other interested parties. Appendix B of the EA includes a copy of the IICEP letter mailed to the agencies for this action, the IICEP distribution list, and agency and public comments. Agency responses were included in Appendix B, once received. Agency coordination specific under Section 404 of the Clean Water Act (CWA) and Section 106 of the National Historic Preservation Act (NHPA) are included in Appendix C.

A Notice of Availability for the EA and Draft FONSI/FONPA was published in the *Grand Forks Herald* on February 23 and 24, 2005. This was done to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. No public comments were received on the EA and Draft FONSI/FONPA.

1.6 Introduction to the Organization of this Document

This EA is organized into seven sections. Section 1 contains background information on Grand Forks AFB, a statement of the purpose of and need for the Proposed Action, the location of the Proposed Action, a listing of applicable regulatory requirements, and an introduction to the organization of the EA. Section 2 provides a detailed description of the Proposed Action, alternatives to the Proposed Action, a comparison of alternatives, alternatives considered but not analyzed in detail, a description of the No Action Alternative, and a description of the decision to be made. Section 3 contains a general description of the biophysical resources and baseline conditions that potentially could be affected by the Proposed Action, Alternatives, or the No Action Alternative. Section 4 presents an analysis of the direct and indirect environmental effects of the Proposed Action and Alternatives on Grand Forks AFB and the surrounding area, and Section 5 presents an analysis of the potential cumulative effects of the Proposed Action and Alternatives. Section 6 lists the preparers of the EA, and Section 7 lists the sources of information used in the preparation of the document. Appendix A includes a brief description of laws, regulations, and other requirements that are relevant to the Proposed Action and are considered in the EA. Appendix B includes a copy of IICEP letters,

distribution list, and agency responses. Appendix C presents documentation of the coordination between the Base and the U.S. Army Corps of Engineers (USACE), as required under Section 404 of the CWA, as well as coordination with the North Dakota SHPO, as required by Section 106 of the NHPA. Appendix D presents threatened and endangered species and species of concern for North Dakota.

THIS PAGE INTENTIONALLY LEFT BLANK

2. Description of Proposed Action and Alternatives

This section has five subsections: a detailed description of the Proposed Action, a detailed description of the alternative carried forward for detailed analysis, a description of the No Action Alternative, identification of alternatives eliminated from further consideration, and a description of the decision to be made and identification of the preferred alternative.

2.1 Description of the Proposed Action

The Proposed Action involves replacing approximately 4.2 miles of perimeter fence at the northern end of the airfield and upgrading the existing perimeter road along entire length (approximately 9.17 miles) at Grand Forks AFB. The segment of the perimeter fence that would be replaced (Figure 2-1) is a three-strand, barbed-wire fence. It would be demolished and replaced with a 7-foot chain-link fence topped by three strands of barbed wire. Heavy equipment would be used to install the fence and associated posts; the posts would be pushed into the ground.

Upgrading the perimeter road would involve tilling the top 3 inches of soil on the existing road bed, as well as adding and compacting clay soils as needed to build up the road to a width of 12 feet. After tilling the road bed, a gravel overlay approximately 6 to 8 inches deep would be installed providing proper compaction and drainage (Figure 2-2). The tilled soil layer depicted in Figure 2-2 represents a combination of existing topsoil, underlying subsoil, and possibly some imported clay soil (if needed to build up the road). The only gated locations along the perimeter road would be at the main entrances. This would require removing two small segments of fence that were upgraded and connected to the airfield security fence in FYs 1999 and 2001.

A culvert consisting of two 12-inch pipes (Figure 2-3) would be installed under the southwest section of the perimeter road and fence to allow for the normal flow of drainage water. In this area, preparing the site would involve excavating and removing topsoil. Excavation materials associated with the culvert installation would be spread thinly and uniformly on the adjacent grass field.

Wetland low-water crossings would be constructed in various locations, as necessary, along the perimeter road to minimize the impact from patrol vehicles, as well as to maintain wetland hydrology in these areas. These wetland crossings would be constructed by removing the current vegetative cover, installing a geotextile layer, placing a 3-inch layer of aggregate that is 1.5 inches in diameter or greater, placing a second geotextile layer over the crushed rock, and placing a final 6-inch cleaned,

Figure 2-1. Proposed Security Perimeter Fence and Road Improvements at Grand Forks AFB

crushed rock overlay as the road surface (Figure 2-4). Silt fencing would be installed on each wetland site and along the northwest ditch, which leads to the Turtle River, to control sedimentation problems during construction. The silt fences would be removed post-construction.

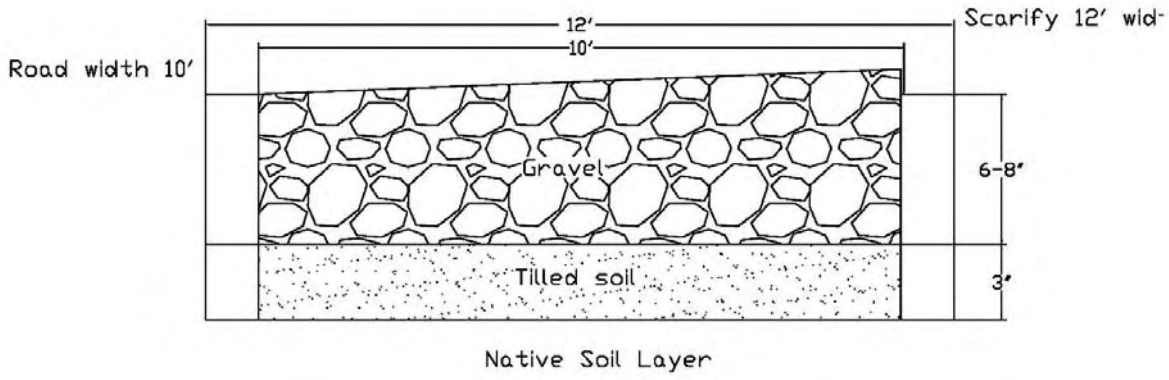


Figure 2-2. Cross-Section Drawing of Proposed Perimeter Road

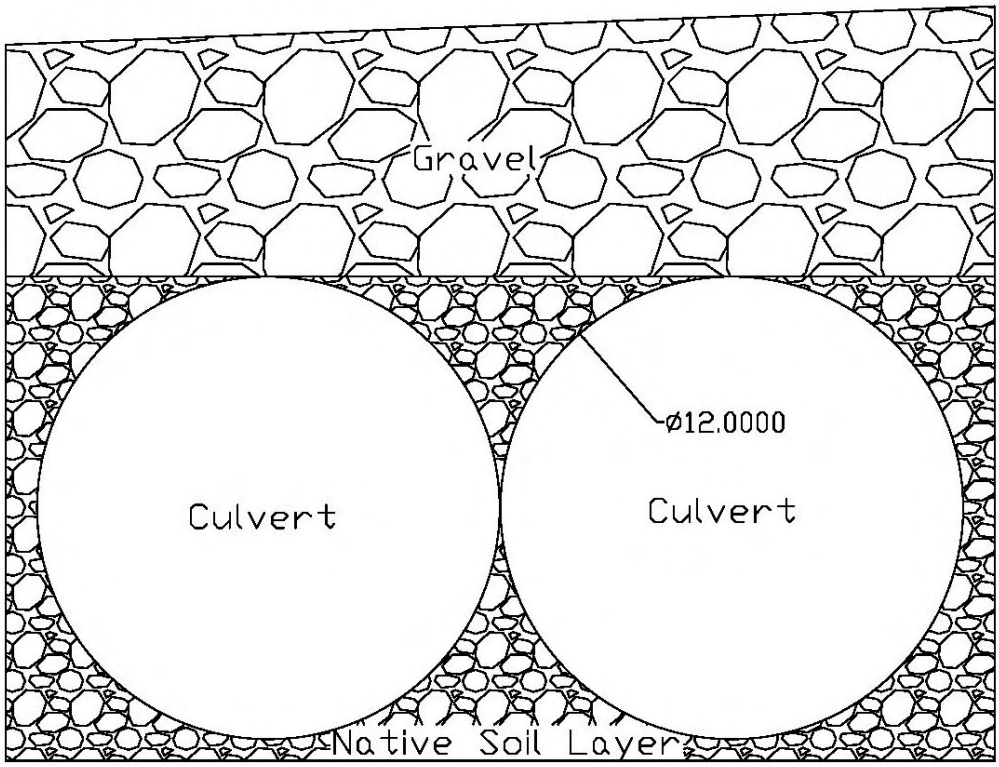


Figure 2-3. Cross-Section Drawing for Proposed Perimeter Road Culvert

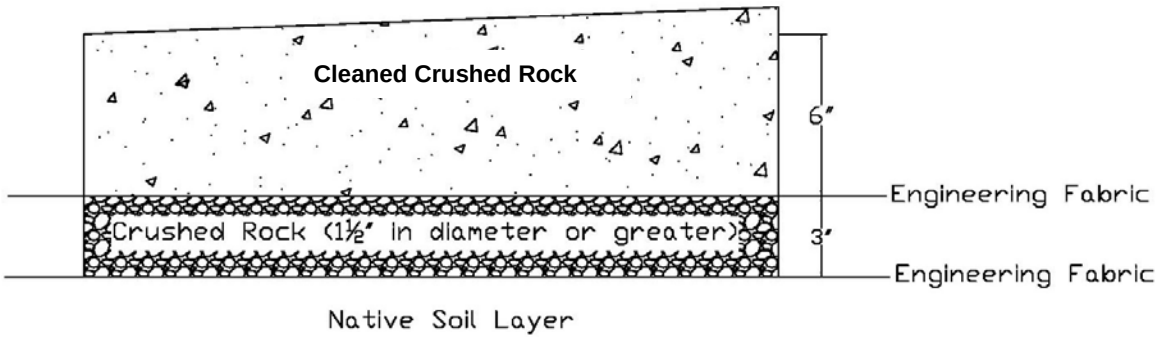


Figure 2-4. Cross-Section Drawing for Proposed Perimeter Road Wetland Crossings

2.2 Alternative Action

The Alternative Action, similar to the Proposed Action, would involve replacing approximately 4.2 miles of perimeter fence at the northern end of the airfield, as described in Section 2.1. The culvert and wetland crossings described for the Proposed Action would also be installed under the Alternative Action.

Under the Alternative Action, a new perimeter road would be constructed and not just upgraded. The existing perimeter road would be excavated, and a 40-foot area (20 feet on either side of the fence line) would be graded and compacted. A new gravel perimeter road would then be constructed approximately 20 feet from the inside of the fence line. The road would be approximately 12 feet wide and 9.17 miles long; gravel would be overlaid on the graded surface to a depth of 6 to 8 inches. As with the Proposed Action, the only gated locations along the perimeter road would be at the main entrances. This would require removing two small segments of fence that were upgraded and connected to the airfield security fence in FYs 1999 and 2001 (the road crosses two segments of upgraded fence that would have to be removed; see Figure 2-1).

2.3 No Action Alternative

Under the No Action Alternative, the perimeter fence and road at Grand Forks AFB would not be upgraded. The 4.2-mile segment of the existing perimeter fence would continue to be three-strand barbed wire. This fence does not provide adequate security, and would continue to be marked as a weakness on future vulnerability and force protection assessments.

The perimeter road would continue to switch between inside and outside of the perimeter fence, which requires Security Forces personnel to conduct a portion of their duties both inside and outside the Base perimeter. Currently, the perimeter road is deteriorating, rough, and overgrown with

vegetation in most places, and even nonexistent in some locations. During and after inclement weather events, such as snow or heavy rain, the road is impassable in certain locations, especially where it crosses wetlands. All of these conditions would continue to pose a hindrance to the required surveillance patrols required at Grand Forks AFB.

2.4 Decision to be Made and Identification of the Preferred Alternative

The 319 ARW and AMC would make one of the following decisions:

- Implement the Proposed Action
- Implement the Alternative Action
- No Action Alternative

The Preferred Alternative is the implementation of the Proposed Action at Grand Forks AFB, as selected by 319 ARW and AMC.

THIS PAGE INTENTIONALLY LEFT BLANK.

3. Affected Environment

Section 3 describes the environmental and socioeconomic resources and conditions most likely to be affected by the proposed construction projects. This section provides information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential environmental and socioeconomic impacts of the Proposed Action, Alternative Action, and No Action Alternative on the baseline conditions are described in Section 4.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially affected by the Proposed Action. Some aspects of the affected environment (noise, land use, air quality, safety, socioeconomics and environmental justice, infrastructure, and hazardous materials and wastes) would not be affected by the Proposed Action. Those resource areas have been omitted from this analysis. The following details the basis for such exclusions:

Noise. Implementation of the Proposed Action or the Alternative Action would not involve permanent alterations to aircraft inventories, operations, or missions. No new permanent ground-based heavy equipment operations would be included in the Proposed Action or the Alternative Action. Although some military housing could be impacted by an increase in ambient noise levels associated with the use of heavy construction equipment, residents are generally accustomed to some noise associated with aircraft operations and maintenance, as well as other on-Base construction activities. Furthermore, noise produced by construction activities associated with the Proposed Action or the Alternative Action would be temporary and would not significantly affect sensitive receptors. Accordingly, the USAF has omitted detailed examination of noise.

Land Use. All activities associated with the Proposed Action or the Alternative Action would be consistent with present and foreseeable land use patterns at Grand Forks AFB. Implementation of the Proposed Action or the Alternative Action would not alter the existing land use at Grand Forks AFB. Accordingly, the USAF has omitted detailed examination of land use.

Air Quality. Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by USEPA for "criteria pollutants," including ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter equal to or less than 10 microns in diameter, particulate matter equal to or less than 2.5

microns in diameter, and lead. NAAQS represent maximum levels of background pollution in the ambient air that are considered safe, with an adequate margin of safety to protect public health and welfare.

USEPA classifies air quality in an air quality control region (AQCR) or in subareas of an AQCR according to whether the concentration of criteria pollutants in ambient air exceeds the primary or secondary NAAQS. All areas within each AQCR are therefore designated as either "attainment," "nonattainment," or "unclassified" for each of the seven criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS for a criteria pollutant, as set by the USEPA. Nonattainment indicates that air quality exceeds NAAQS, while an unclassifiable air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. Areas designated by USEPA as being in nonattainment for one or more of the seven NAAQS may petition USEPA for redesignation as a maintenance area if they are able to demonstrate they have met the national standard for the three years preceding the redesignation request. Ambient air quality for Grand Forks AFB is classified as an attainment area for all seven criteria pollutant NAAQS.

The General Conformity Rule, which requires Federal agencies to comply with State Implementation Plans for air quality, and subsequent rules for determining air quality conformity prior to implementing a proposed Federal action, applies only to activities in nonattainment or maintenance areas. Therefore, this rule does not apply at Grand Forks AFB as it is located in an attainment area and a full conformity determination is not required.

Neither the Proposed Action nor the Alternative Action should adversely affect air quality at Grand Forks AFB. Implementation of the Proposed Action or the Alternative Action would not involve permanent alterations to aircraft inventories, operations, or missions that could affect air quality. No new permanent ground-based heavy equipment operations would be included in the Proposed Action or the Alternative Action. There would be no change in the number of personnel assigned to Grand Forks AFB; therefore there would be no changes to air quality from an increase in the number of automobiles traveling to and from the Base.

Although fugitive emissions (dust) would likely increase during construction, prevailing winds would quickly dissipate the particulate matter and impacts would only be temporary (for the duration of the construction activities). The use of construction equipment would result in a temporary increase in

vehicle emissions; however, this is not expected to adversely affect air quality in the vicinity of the Base. Accordingly, the USAF has omitted detailed examination of air quality.

Safety. The only safety concerns associated with the Proposed Action or Alternative Action involve construction and demolition safety. However, construction projects on USAF bases are strictly guided by numerous Department of Defense (DOD) and USAF regulations, as well as procedures designed to comply with Occupational Safety and Health Administration and USEPA standards. Individuals, supervisors, managers, commanders, and contractors working with Grand Forks AFB would be expected to adhere to recognized safety standards established by AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health Program*. It is assumed that safe demolition practices, which would only be necessary during the removal of 4.2 miles of fence, would be used at all times, greatly reducing safety hazards as a result of the Proposed Action. Accordingly, the USAF has omitted detailed examination of safety.

Socioeconomics and Environmental Justice. Implementation of the Proposed Action or the Alternative Action would not involve any activities that would contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Grand Forks AFB, therefore there would be no changes in area population or associated changes in demand for housing and services. Accordingly, USAF has omitted detailed examination of socioeconomics. There would be no environmental justice concerns associated with the Proposed Action or the Alternative Action. Accordingly, the USAF has omitted a detailed examination of environmental justice.

Infrastructure. Generally, infrastructure includes Base transportation systems, electrical power, natural gas supply, liquid fuel, water supply, solid waste management, sanitary sewer systems, central heating and cooling systems, communications systems, and airfield pavement. Of these, only solid waste management has the potential to be affected by the alternatives for the perimeter fence and road project at Grand Forks AFB. Although the Proposed Action and Alternative Action involve upgrading the perimeter road, the road is not a part of the main Base transportation system of paved roads, and does not support general traffic on Base.

There would be a slight, temporary increase in construction and demolition debris generated as a result of implementing the Proposed Action or the Alternative Action. Most additional solid waste would be generated from the demolition of 4.2 miles of the existing perimeter fence, which is a three-strand barbed wire fence. All materials that can be recycled would be sent through the Base recycling

program. Once the project is complete, solid waste generation would return to preconstruction levels. Therefore, implementation of the Proposed Action or Alternative Action at Grand Forks AFB would not impact the solid waste management program at the Base or the capacity of the local solid waste disposal facilities. Accordingly, the USAF has omitted detailed examination of infrastructure.

Hazardous Materials and Wastes. The Environmental Restoration Program (ERP) is the USAF's environmental restoration program based on the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980*. CERCLA provides Federal agencies the authority to inventory, investigate, and clean up uncontrolled or abandoned hazardous waste sites. There are seven ERP sites that have been identified as potentially impacted by past hazardous material or hazardous waste activities at Grand Forks AFB. The sites are the Fire Training Area/Old Sanitary Landfill Area, FT-02; New Sanitary Landfill Area, LF-03; Strategic Air Ground Equipment Building 306, ST-04; Explosive Ordnance Detonation Area, OT-05; Base Tanks Area, ST-06; POL Off-Loading Area, ST-07; and Refueling Ramps and Pads, ST-08. Two sites, OT-05 and ST-06, are closed and the remaining sites have "remedy in place." None of these sites have been identified on the National Priorities List.

One ERP site, Explosive Ordnance Disposal Area, OT-05, is located within approximately 200 feet of the perimeter road. Site OT-05 is considered clean and closed. It is thus unlikely that contamination would be encountered during these construction activities; however, should contamination be encountered, the handling, storage, transportation and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations, AFIs, and Grand Forks AFB policy. Accordingly, the USAF has omitted detailed examination of hazardous materials and wastes.

3.1 Geological Resources

3.1.1 Definition of the Resource

Geological resources consist of the earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography, soils, geology, minerals, and, where applicable, paleontology.

Geology, the study of the earth's composition, provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition. Hydrogeology extends the study of the subsurface to water-bearing structures. Hydrogeological information helps in the assessment of groundwater quality and quantity and its movement.

Topography pertains to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

3.1.2 Existing Condition

Physiography and Topography. The topography of Grand Forks AFB is generally flat. The Base is in the Agassiz Lake Plain District, which was formed as a result of the melting of the last glacier about 12,000 years ago (319 ARW 2001). The lake plain is generally level with elevations ranging from 880-920 feet above mean sea level (MSL) and is characterized by somewhat poorly drained flats and swells (319 ARW 2001).

Grand Forks AFB is in the Central Lowlands physiographic province (319 ARW 2001). The Central Lowlands province is mostly gently rolling plains (USGS 1998). The Base is surrounded mainly by rural areas with the exception of three agricultural communities. According to the Grand Forks AFB General Plan there are no geological, topographical, or physiographical constraints for development (319 ARW 2001).

Natural Hazards. North Dakota is characterized by a low level of seismic activity (USGS 2002). The Grand Forks, North Dakota, area does not typically experience earthquakes because of its location in relation to fault zones.

Soils. The soils at Grand Forks AFB were formed in glaciolacustrine deposits overlying glacial till (319 CES/CEV 2000). The sediments from the late Wisconsin glacial drift comprise the upper layer of deposits, which are approximately 224 feet thick (319 ARW 2001). There are six predominant soil associations found at the Base: Antler-Gilby-Svea, Bearden-Antler, Glydon-Gardena, LaDella-Cashell, Ojata, and Wyndmere-Tiffany-Arveson.

Approximately 27 soil types occur within the associations at Grand Forks AFB. All of these soils are deep, level to nearly level, and somewhat poorly drained to moderately drained (319 ARW 2001). The Bearden-Antler, Glydon-Gardena, LaDella-Cashell, and Ojata soils are moderately fine-textured

to medium-textured. The Wyndmere-Tiffany-Arveson soil type is medium to moderately coarse-textured.

Soils within the security perimeter road and fence project area have been previously disturbed by construction of the original perimeter road and fence, as well as subsequent fence improvements, vehicle and pedestrian trampling during Force Protection patrols, and grounds maintenance activities.

3.2 Water Resources

3.2.1 Definition of the Resource

Water resources include groundwater, surface water, and floodplains. The quantity and quality of available water and the demand for potable, irrigation, and industrial water affect its value.

Groundwater. Groundwater consists of the subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Surface Water. Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Storm water flows, which might be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots, are important to management of surface water. Storm water is important to surface water quality also because of the potential to introduce sediments and other contaminants into lakes, rivers, and streams.

Storm water systems convey precipitation away from developed sites to appropriate receiving surface waters. For a variety of reasons, storm water systems might employ many different devices to slow the movement of water. For instance, a large, sudden flow could scour a streambed and harm biological resources in that habitat. Storm water systems provide the benefit of reducing amounts of sediments and other contaminants that would otherwise flow directly into surface waters. Failure to size storm water systems appropriately to either hold or delay conveyance of the largest predicted precipitation event often leads to downstream flooding and the environmental and economic damages associated with flooding. As a general rule, higher densities of development, such as those found in urban areas, require greater degrees of storm water management because of the higher proportions of impervious surfaces that occur in urban centers.

Floodplains. Floodplains are areas of low-level ground present along a river or stream channel. Such lands might be subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency, which evaluates the floodplain for 100- and 500-year flood events. EO 11988, *Floodplain Management*, and some state and local regulations limit floodplain development to passive uses such as recreational and preservation activities to reduce the risks to human health and safety.

3.2.2 Existing Condition

Groundwater. Groundwater in Grand Forks County occurs in unconsolidated glacial drift aquifers, and in rocks of Cretaceous and Ordovician age underlying the glacial deposits. The Emerado Aquifer is the major glacial drift aquifer underlying Grand Forks AFB approximately 50 to 75 feet below ground surface. The aquifer consists primarily of medium- to coarse-grained, poorly sorted sand, and has an area extent of about 15 square miles. The principal bedrock aquifer in the area is the Dakota Aquifer, which is a widespread regional aquifer present in most of the Great Plains states. The aquifer is comprised of Lower Cretaceous strata, which are primarily the Fall River and Lakota Formations in the vicinity of Grand Forks AFB (319 CES/CEV 2004).

Water quality in the Emerado Aquifer is generally poor, probably due to upward leakage of poor-quality groundwater from underlying bedrock aquifers (319 CES/CEV 2004). Samples from two wells exhibited dissolved solids concentrations of 1,890 parts per million (ppm) and 2,240 ppm with high salinity. Groundwater quality in the Dakota Aquifer is very saline and generally unsuitable for domestic and most industrial uses. The average dissolved solids content is about 4,400 ppm, with excessive contents of iron, chloride, and sulfate (319 CES/CEV 2004).

Surface Water. Runoff at Grand Forks AFB flows primarily into grassy drainage ditches on the west, northwest, north, and south sides of the main Base. The Northwest Ditch collects drainage from the northern portion of the Base; the West Ditch drains runways on the west side; the South Ditch drains vehicle maintenance, power production, and fuel storage; and the North Ditch receives storm water from hangars, selected aircraft maintenance areas, and non-industrial areas. The Northwest and West ditches drain to the nearby Turtle River (see Figure 3-1), while the South and North ditches flow to Kellys Slough Wildlife Management Area, a USFWS-managed open wetland area. Each of these discharge points is equipped with oil booms (319 CES/CEV 2004).

The Turtle River watershed, which includes the Grand Forks AFB area, falls within the Red River Basin. The Turtle River is a fourth order tributary to the Red River and drains approximately 311 square miles. The headwaters (North and South Branch) of Turtle River originate some 10 miles west of the western boundary of the Base. It flows in an east-northeast direction joining the Red River approximately 25 miles northeast of Grand Forks AFB. The Turtle River has a Class II stream designation from the North Dakota Department of Health which means that it might be intermittent, but, when it is flowing, it meets the chemical, physical, and bacteriological requirements for municipal use. The designation also indicates that the river's water is of sufficient quality to use for irrigation, propagation of resident fish species, boating, swimming, and other water-based recreation (319 CES/CEV 2004).

Floodplains. The 100-year floodplain, or an area with a 1 percent chance of inundation in any given year, has been designated for the Turtle River. As shown in Figure 3-1, this floodplain extends onto Grand Forks AFB beyond the existing perimeter road in the northwest corner, and is very close to the Base boundary on the west side. Approximately 46 acres of the Base fall within this floodplain (319 CES/CEV 2004).

3.3 Biological Resources

3.3.1 Definition of the Resource

Biological resources include native or naturalized plants and animals, and the habitats, such as wetlands, forests, and grasslands, in which they exist. Sensitive and protected biological resources include plant and animal species listed as threatened or endangered by the USFWS or a state. Determining which species occur in an area affected by a Proposed Action may be accomplished through literature reviews and coordination with appropriate Federal and state regulatory agency representatives, resource managers, and other knowledgeable experts.

Under the Endangered Species Act (ESA) (16 U.S.C. § 1536), an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The USFWS maintains an updated list of species that are regarded as candidates for possible listing under the ESA. Even though candidate species receive no statutory protection under the ESA, the USFWS believes it is important to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the ESA.

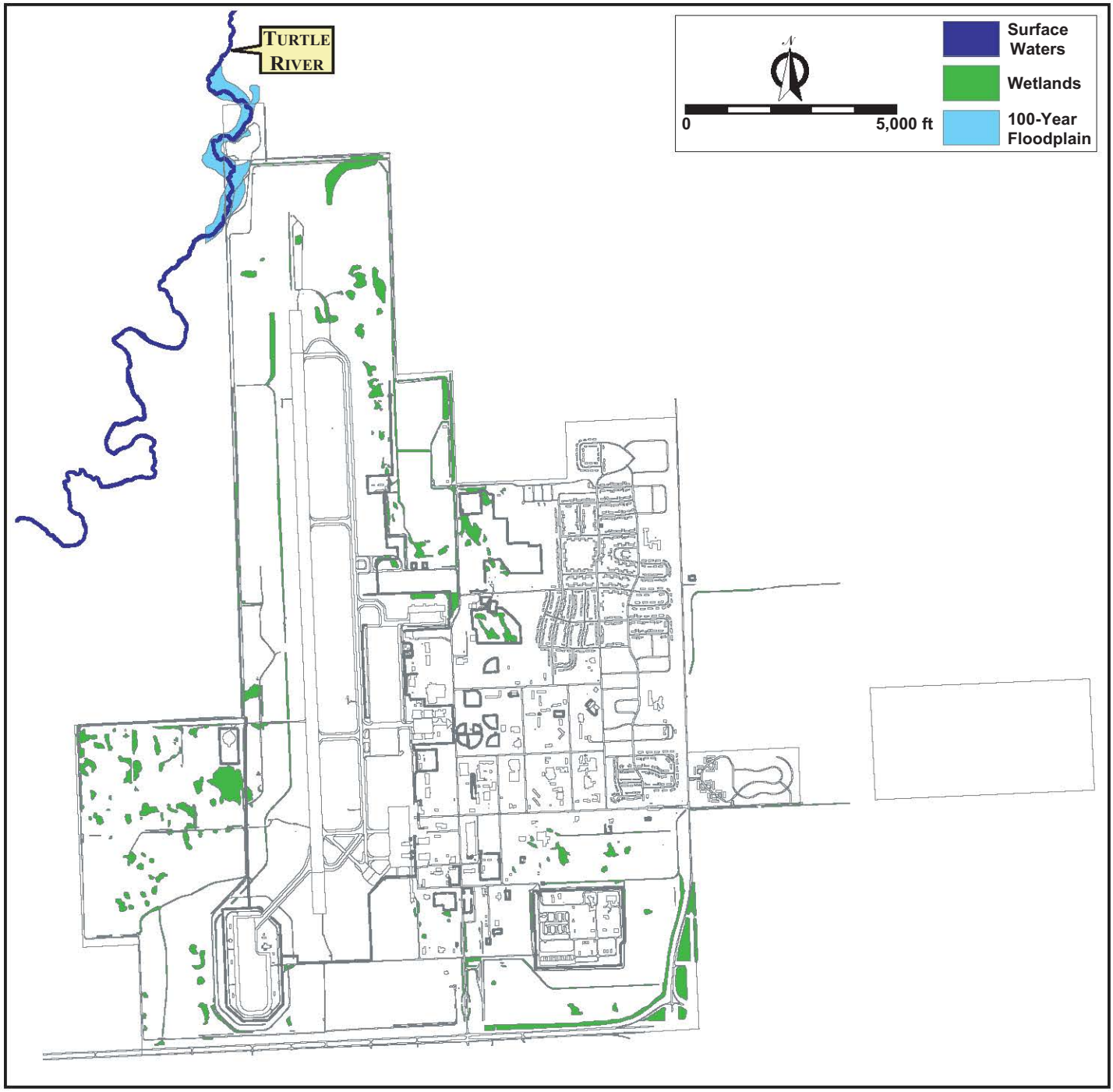


Figure 3-1. Surface Water, 100-Year Floodplain, and Wetlands on Grand Forks AFB

Biological resources also include wetlands. Wetlands are important natural systems and habitats because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat, unique flora and fauna niche provision, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the "waters of the U.S." under Section 404 of the CWA. The term "waters of the United States" has a broad meaning under the CWA and incorporates deep water aquatic habitats and special aquatic habitats (including wetlands). The USACE defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR 328).

In addition, EO 11990, *Protection of Wetlands*, directs Federal agencies to avoid destruction or modification of wetlands whenever there is a practicable alternative. EO 11990 instructs agencies to avoid undertaking or aiding new construction in wetlands unless the head of the agency finds there is no practicable alternative to construction in the wetland and proposed construction incorporates all possible measures to limit harm to the wetland.

The following sections have been summarized from the Draft Integrated Natural Resources Management Plan (INRMP) for Grand Forks AFB. For a complete account of biological resources at the Base, please refer to the INRMP (319 CES/CEV 2004).

3.3.2 Existing Conditions

***Vegetation*.** When the initial construction of Grand Forks AFB was completed in the mid-1950s, most of the Base was planted with a standard mixture of grasses established by the DOD. Included in this mixture were two introduced grass species, smooth brome (*Bromus inermis*) and Kentucky blue grass (*Poa pratensis*), both of which are still predominant throughout the Base (319 CES/CEV 2004), especially in the semi-improved areas. Portions of the unimproved areas on Base have also been used in the past to support the active cultivation of grass and alfalfa hay (Figure 3-2). These areas are currently undergoing rehabilitation for future hay lease operations (GFAFB 2003a, GFAFB 2003b).

Native flora in the vicinity of the Base has been studied by various researchers, mostly associated with the University of North Dakota. Of the ten natural communities identified by the North Dakota Natural Heritage Database as occurring in Grand Forks County, two are represented on Base: River/Creek and Lowland Woodland. Both of these natural communities occur in the Turtle River

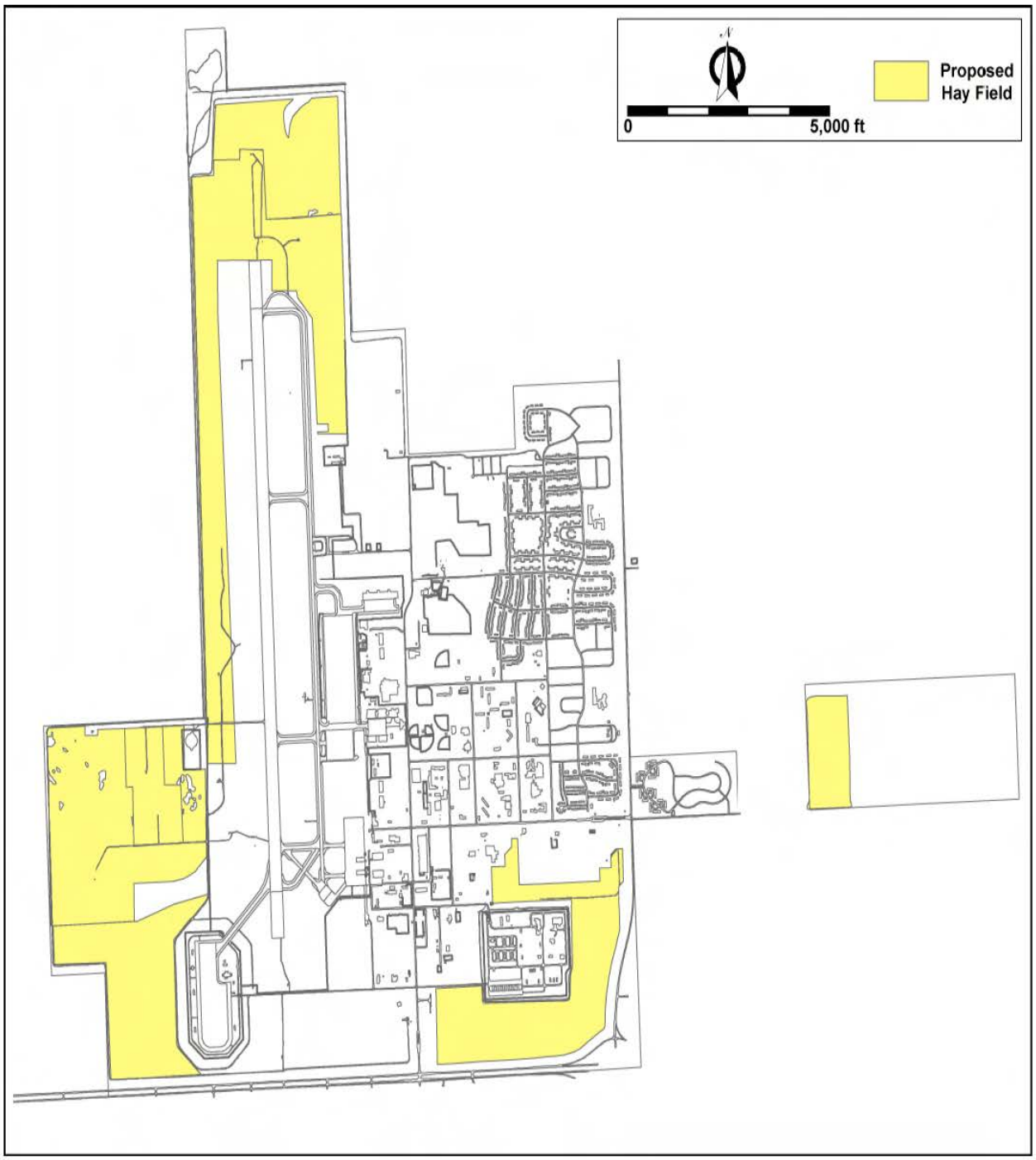


Figure 3-2. Location of Grass and Alfalfa Hay Fields

riparian corridor in the northwestern corner of the Base, and are considered rare habitats by the North Dakota Natural Heritage Program (NDNHP) (NDNHP 1994). The River/Creek natural community is a water channel with a mean flow averaging between 1,000 and 10,000 cubic feet per second that could have zero flow for up to several weeks each year. There is no vegetative component to this natural community (NDNHP 1994).

Dominant trees in the Lowland Woodland community are elm (*Ulmus* sp.), cottonwood (*Populus* sp.), and green ash (*Fraxinus pennsylvanica*); however, many of the elms have been killed by Dutch elm disease. European buckthorn (*Rhamnus cathartica*) (a highly invasive, nonnative species), chokecherry (*Prunus virginiana*), and wood rose (*Rosa woodsii*) are common in the understory of this community. Wood nettle (*Laportea canadensis*), stinging nettle (*Urtica dioica*), beggars-ticks (*Bidens frondosa*), and waterleaf (*Hydrophyllum viginianum*) are typical forbs (319 CES/CEV 2004).

The upland areas immediately bordering the Lowland Woodland community are generally above the high-flood level. Species such as bur oak (*Quercus macrocarpa*), green ash, basswood (*Tilia americana*), and common hackberry (*Celtis occidentalis*) are dominant in the canopy. The understory in this area includes American plum (*Prunus americana*), European buckthorn (*Rhamnus cathartica*), chokecherry, juneberry (*Amelanchier alnifolia*), Missouri gooseberry (*Ribes missouriensis*), wolfberry (*Symphoricarpos occidentalis*), red raspberry (*Rubus ideus*), and prickly ash (*Zanthoxylum americanum*). Typical forbes in this area include meadow anemone (*Anemone canadensis*), downy yellow violet (*Viola pubescens*), tall white violet (*V. canadensis*), false Solomon's seal (*Polygonatum biflorum*), wild lily of the valley (*Maianthemum canadense*), burdock (*Arctium minus*), golden glow (*Rudbeckia lacinata*), and Canada goldenrod (*Solidago candensis*). A small shelterbelt of Scotch pine (*Pinus sylvestris*) is close to the Turtle River corridor in the northwest corner of the Base (319 CES/CEV 2004).

Although no true prairie remnants remain on Grand Forks AFB, some prairie index species, such as coneflowers (*Echinacea* sp.) are found in the unimproved and semi-improved areas mixed in with bromegrass and various herbaceous annuals such as goldenrods (*Solidago* spp.). In addition, an effort has been made to recreate a tallgrass prairie plant community at Grand Forks AFB. Prairie View Nature Preserve is in the northeast corner of the Base. The preserve is a combination of improved, semi-improved, and minimal maintenance areas, designed to resemble a tallgrass prairie plant association. The preserve was planted with native tallgrass prairie species, such as bluestem (*Andropogon* sp.), Indiangrass (*Sorghastrum nutans*), and buffalo grass (*Buchloe dactyloides*), and

provides Base residents and working personnel with the opportunity to experience a true grassland ecosystem (319 CES/CEV 2004).

Improved turfgrass areas on Grand Forks AFB are dominated by red fescue (*Festuca rubra*) and Kentucky bluegrass. Shelterbelts, comprised mostly of American elm (*Ulmus americana*), green ash, the non-native Russian olive (*Elaeagnus angustifolia*), lilacs (*Syringa vulgaris*), and cottonwoods (*Populus* spp.) are planted in a number of locations to help protect housing and other main cantonment areas from wind, cold, and snow. Ornamental trees planted in housing areas are primarily Blue spruce (*Picea pungens*), green ash, and lombardy poplars (*Populus nigra*) (319 CES/CEV 2004).

Fairways on the golf course at Grand Forks AFB are comprised primarily of ryegrass (*Lolium* spp.) and fescue, while tees are planted with Kentucky bluegrass and bentgrass (*Agrostis* spp.). Numerous native and nonnative tree species have been planted at the golf course, including poplars, blue spruce, green ash, Rocky Mountain juniper (*Juniperus scopulorum*), laurel leaf willow (*Salix pentandra*), Japanese lilac tree (*Syringa reticulata*), Amur chokecherry (*Prunus maackii*), crabapple (*Malus* sp.), and Redmond linden (*Tilia americana 'Redmond'*). Eighty percent of the poplars, which tend to have less than a 20-year lifespan, are in decline. Lightning and other weather-related damage to trees is fairly common on the golf course (319 CES/CEV 2004).

Nine species of noxious and invasive plants have been found on Grand Forks AFB: absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), field bindweed (*Convolvulus arvensis*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), spotted knapweed (*Centaurea maculosa*), bull thistle (*Cirsium vulgare*), perennial sowthistle (*Sonchus arvensis*), and wavyleaf thistle (*Cirsium undulatum*). Infestations are greatest in areas that have been disturbed but are not mowed regularly (GFAFB 2003b).

Vegetation cover within the security perimeter road and fence project area, which consists mainly of introduced grass species and planted shelterbelts, ranges from zero (bare ground) to areas of relatively dense herbaceous and woodland vegetation (greater than 40 percent). These areas have been previously disturbed by construction of the original perimeter road and fence, as well as subsequent fence improvements, vehicle and pedestrian trampling during Force Protection patrols, and grounds maintenance activities. Some wetland areas are also found in the project area, and they are discussed in a separate section.

Wildlife. Due to extensive development, terrestrial and aquatic habitats are very limited at Grand Forks AFB. However, the habitat available at the Base does support a variety of mammals, birds, amphibians, and reptiles. According to the North Dakota Game and Fish Department, fish are not known to occur at Grand Forks AFB. Nonpoint source pollution from upstream areas along the Turtle River has created water quality problems in the section of river near the Base. However, some game fish species in portions of the Turtle River might pass through the area associated with the Base. Primary species include Northern pike (*Esox lucius*), white sucker (*Catostomus commersoni*), rock bass (*Ambloplites rupestris*), black bullhead (*Ameiurus melas*), and channel catfish (*Ictalurus punctatus*). North Dakota also stocks the Turtle River with brown (*Salmo trutta*) and rainbow trout (*Oncorhyncus mykiss*) each spring near Turtle River State Park (319 CES/CEV 2004).

White-tailed deer (*Odocoileus virginianus*) are the most common ungulate that occurs at Grand Forks AFB, although moose (*Alces alces*) are also known to occur in the vicinity of the Base. Carnivorous and omnivorous species with the potential to occur at the Base include coyote (*Canis latrans*), red fox (*Vulpes vulpes*), skunk (*Mephitis mephitis*), mink (*Mustela vison*), badger (*Taxidea taxus*), raccoon (*Procyon lotor*), and bobcat (*Lynx rufus*).

Small mammals documented to occur on the Base include the masked shrew (*Sorex cinereus*), short-tailed shrew (*Blarina brevicauda*), white-tailed jackrabbit (*Lepus townsendii*), white-footed mouse (*Peromyscus leucopus*), deer mouse (*Peromyscus maniculatus*), meadow jumping mouse (*Zapus hudsonius*), meadow vole (*Microtus pennsylvanicus*), southern red-backed vole (*Clethrionomys gapperi*), Northern pocket gopher (*Geomys bursarius*), Richardson's ground squirrel (*Spermophilus richardsonii*), red squirrel (*Tamiasciurus hudsonicus*), and beaver (*Castor canadensis*) (GFAFB 2004). Other mammals that might occur at Grand Forks AFB include the short- and long-tailed weasels (*Mustela erminea* and *M. frenata*), Eastern cottontail rabbit (S*ylvilagus floridanus*), Eastern chipmunk (*Tamias striates*), and grey squirrel (*Sciurus carolinensis*) (319 CES/CEV 2004).

Of the seven species of bats with distributions potentially including Grand Forks AFB, two have been documented in the Turtle River area of the Base, the red bat (*Lasiurus borealis*) and the silver-haired bat (*Lasionycteris noctivagans*) (GFAFB 2004), and a third, the little brown bat (*Myotis lucifigus*) has been reported by Base personnel (NDNHP 1994).

A variety of birds occur at Grand Forks AFB, including species of wading birds, waterfowl, and shorebirds that use the open water habitat provided by the sewage lagoons east of the Base. Raptors, or birds of prey, that occur in the vicinity of Grand Forks include the red-tailed hawk (*Buteo*

jamaicensis), ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), and northern harrier (*Circus cyaneus*). Woodland and grassland species found in the vicinity of the Base include the upland sandpiper (*Bartramia longicauda*), killdeer (*Charadrius vociferous*), mourning dove (*Zenaida macroura*), tree swallow (*Tachycineta bicolor*), western meadowlark (*Sturnella neglecta*), brown-headed cowbird (*Molothrus ater*), red-winged blackbird (*Agelaius phoeniceus*), American robin (*Turdus migratorius*), horned lark (*Eremophila alpestris*), white-throated sparrow (*Zonotrichia albicollis*), grasshopper sparrow (*Ammodramus savannarum*), savannah sparrow (*Passerculus sandwichensis*), clay-colored sparrow (*Spizella pallida*), vesper sparrow (*Pooecetes gramineus*), and black-capped chickadee (*Poecile atricapilla*). Birds that might use the habitat provided by the Base sewage lagoons include the Canada goose (*Branta canadensis*), common goldeneye (*Bucephala clangula*), mallard (*Anas platyrhynchos*), Wilson's phalarope (*Phalaropus tricolor*), redhead (*Aythya americana*), blue-winged teal (*Anas discors*), canvasback (*Aythya valisineria*), American coot (*Fulica americana*), the ring-billed gull (*Larus delawarensis*), and the black tern (*Chlidonias niger*) (319 CES/CEV 2004).

Reptiles and amphibians with the potential to occur at Grand Forks AFB include the Northern prairie skink (*Eumeces septentrionalis*), common garter snake (*Thamnophis sirtalis*), plains garter snake (*Thamnophis radix*), smooth green snake (*Opheodrys vernalis*), Western hognose snake (*Heterdon nasicus*), prairie rattlesnake (*Crotalus viridis*), Western painted turtle (*Chrysemys picta belli*), Northern leopard frog (*Rana pipiens*), Western chorus frog (*Pseudacris triseriata*), American toad (*Bufo americanus*), plains spadefoot toad (*Scaphiopus bombifrons*), Woodhouse's toad (*Bufo woodhouseii*), Great Plains toad (*Bufo cognatus*), and the tiger salamander (*Ambystoma tigrinum tigrinum*) (319 CES/CEV 2004).

Threatened and Endangered Species. According to the USFWS-maintained county occurrence list of threatened, endangered, and candidate species and designated critical habitat in North Dakota, the endangered gray wolf (*Canis lupus*) and the threatened bald eagle (*Haliaeetus leucocephalus*) have the potential to occur in Grand Forks County (USFWS 2004; Appendix C). Although the gray wolf has no particular habitat preference, it is only an occasional transient in North Dakota, and is most often observed in the Turtle Mountains approximately 200 miles from the Base (NatureServe 2004). No critical habitat for this species has been designated in Grand Forks County (319 CES/CEV 2004). Also, it has never been observed at Grand Forks AFB; therefore, the gray wolf is considered not to occur on the Base.

The bald eagle migrates throughout North Dakota in the spring, primarily along the major river courses. Individuals concentrate along the Missouri River during winter and are known to nest in the floodplain forest. However, the bald eagle is considered a transient in the Grand Forks AFB area, as very little habitat (open water) is present. A bald eagle was documented harassing waterfowl at the sewage lagoons during the fall 2003 migration and one is occasionally seen feeding on road kill in the area. No critical habitat for this species has been designated in Grand Forks County (319 CES/CEV 2004).

Lists of North Dakota animal and plant species of concern are maintained by the NDNHP, and were reviewed to identify those species of concern that are known to occur in Grand Forks County. Appendix D provides a list of such species, a brief description of their habitat, and indication of whether or not they have been observed at Grand Forks AFB.

Wetlands. Wetlands on Grand Forks AFB occur frequently in drainage ways, low-lying depressions, and potholes. Wetlands are highly concentrated in drainage ways leading from the wastewater treatment lagoons to Kelly's Slough National Wildlife Refuge. These wetlands immediately east of the Base contain extensive emergent marshes. Species most commonly associated with these wetland areas are hairy-fruit sedge (*Carex trichocarpa*), needle spike-rush (*Eleocharis acicularis*), flat-stem spike-rush (*E. compressa*), pale spike-rush (*E. palustris*), Baltic rush (*Juncus balticus*), grass-leaf rush (*J. marginatus*), knotted rush (*J. nodosus*), poverty rush (*J. tenuis*), Torrey's rush (*J. torreyi*), and chairmaker's bulrush (*Scirpus americanus*) (319 CES/CEV 2000).

In 2000, the Grand Forks AFB Wetland Identification and Delineation Report identified 49 wetlands comprising 23.7 acres at the Base. The wetlands included marshes, prairie potholes, wet meadows, and forested areas. Of these 33 jurisdictional wetlands were delineated, comprising 12.2 acres (319 CES/CEV 2000). The difference in total acreage is a result of the determination that wetland habitat associated with the Base sewage lagoons is not jurisdictional. This delineation is in the process of being updated, however, and, when complete, a new jurisdictional determination would be obtained from the USACE. Figure 3-1 provides a map of wetland areas based on the updated survey at Grand Forks AFB.

Vegetation in the marshes was dominated by cattails (*Typha* spp.), prairie potholes were dominated by smartweed (*Polygonum coccineum*), wet meadows were dominated by spike rushes; and forested wetlands were characterized by cottonwoods and willows (*Salix* spp.) surrounded by emergent wetlands.

Rushes, foxtail barley (*Hordeum jubatum*), sedges, Baltic rush, reed canary grass (*Phalaris arundinacea*), dock (*Rumex* spp.), alder (*Alnus* sp.), and walnut (*Juglans nigra*) were also observed in the wetlands at Grand Forks AFB (319 CES/CEV 2000).

3.4 Cultural Resources

3.4.1 Definition of Resource

Cultural resources are defined by the NHPA as prehistoric and historic sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on the condition and historic use, such resources can provide insight into living conditions in previous civilizations and might retain cultural and religious significance to modern groups.

Typically, cultural resources are subdivided into *archaeological resources* (prehistoric or historic sites where human activity has left physical evidence of that activity but no structures remain standing) or *architectural resources* (buildings or other structures or groups of structures that are of historic or aesthetic significance). Archaeological resources comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., arrowheads and bottles). Architectural resources include standing buildings, bridges, dams and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to be considered for the National Register of Historic Places (NRHP). More recent structures, such as Cold War-era resources, might warrant protection if they are of exceptional importance (criteria consideration G).

Traditional cultural properties or *sacred sites* can include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture.

The EA process requires an assessment of the potential impact of an undertaking on historic properties that are within the proposed project's Area of Potential Effect (APE), according to the stipulations in Section 106 of the NHPA. In accordance with EO 12372, *Intergovernmental Review of Federal Programs*, determinations regarding the potential effects of an undertaking on historic properties are presented to the SHPO.

3.4.2 Existing Conditions

A literature search and intensive archaeological survey of Grand Forks AFB was completed in 1996. The survey identified four sites and three isolated find spots, although none of the sites or isolates is eligible for the NRHP (319 CES/CEV 2003). The Base received concurrence from the SHPO on this determination by letter dated September 16, 1996.

Evidence of at least two buried paleosols, or soils formed on past landscapes, were observed in the cut bank of the Turtle River. While the date of these paleosols is not known, they are probably associated with the Turtle River, and therefore Holocene in age. The present terraces east of the Turtle River appear to have been relatively stable for at least the past 100 years, based on the size of tree trunks, and the probable age of historical archaeological sites elsewhere on the terrace, indicating that the paleosols are more than 100 years old. Although no evidence of cultural material was found in the paleosols, only small portions of these former land surfaces were made visible for inspection; therefore, these areas are considered archaeologically sensitive (Crane et al. 1996).

No evidence for culturally sensitive areas, such as burial mounds, was found during the archeological survey conducted in 1996. Letters were sent to appropriate American Indian tribes at the time requesting their input on any known sacred or otherwise culturally sensitive areas at Grand Forks AFB. None of these groups has responded with any concerns (Crane et al. 1996).

The inventory and evaluation of the built environment at Grand Forks AFB is complete. The inventory and evaluation recommended 166 facilities as eligible for inclusion in the NRHP. The majority of these structures are outside the boundaries of the Base, outside AMC jurisdiction (a Programmatic Agreement between Grand Forks AFB and State Historical Society of North Dakota was prepared to facilitate the disposition of the eligible buildings), or have been destroyed as part of Base Realignment and Closure (BRAC) and compliance with the START I treaty (319 CES/CEV 2003).

Fundamentally, eight buildings at Grand Forks AFB and under AMC management have been identified as eligible or potentially eligible for inclusion in the NRHP due to their association with the Minuteman Missile program: Buildings 313, 606, 703, 704, 705, 706, 707, and 714 (319 CES/CEV 2003). All of these structures are outside the APE for the Proposed Action and Alternative Action.

4. Environmental Consequences

This section of the EA assesses potential environmental consequences associated with the Proposed Action and Alternative Action. Potential impacts are addressed in the context of the scope of the Proposed Action as described in Section 2 and in consideration of the potentially affected environment as characterized in Section 3. The EA analysis includes direct, indirect, and cumulative impacts. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative effects are impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The cumulative impact analysis is provided in Section 5 of this EA.

4.1 Geological Resources

4.1.1 Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development. Analysis of potential impacts on geological resources typically includes the following steps:

- Identification and description of resources that could potentially be affected.
- Examination of a proposed action and the potential effects this action could have on the resource.
- Assessment of the significance of potential impacts.
- Provision of mitigation measures in the event that potentially significant impacts are identified.

Impacts on geology and soils would be significant if they would alter the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function within the environment.

4.1.2 Proposed Action

The Proposed Action would not cause or create perceptible changes to the geology, topography, or physiography of the Grand Forks AFB area. Therefore, no effects on regional or local geology, topography, or physiographic features would result from implementation of the Proposed Action.

Under the Proposed Action, the installation of the fence and associated posts, tilling of the top 3 inches of the road bed soil and installation of the culvert and low-water crossings would result in soil disturbance. Compacting of the soils, if necessary, would also result in disturbances, including potential changes to the hydrologic features of the soils. However, these soils have been previously disturbed and compacted by construction of the original perimeter road and fence, as well as subsequent fence improvements, vehicle and pedestrian trampling during Force Protection patrols, and grounds maintenance activities. Construction activities, predominantly heavy equipment use, have the potential to disturb soils outside of the road bed as well as a result of staging heavy equipment, turning equipment around, and trampling by construction workers.

Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Fugitive dust from construction activities would be minimized by watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. Standard erosion control measures (silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce the potential for soil loss. Therefore, adverse effects on soils at the Base would be negligible.

4.1.3 Alternative Action

The Alternative Action would not cause or create perceptible changes to the geology, topography, or physiography of the Grand Forks AFB area. Therefore, no effects on regional or local geology, topography, or physiographic features would result from implementation of the Alternative Action.

Under the Alternative Action, minor adverse impacts on soils would be expected. Soils would be disturbed as a result of constructing the new perimeter road, installing the fence and associated posts, and installing the culvert and low-water crossings. However, implementing the Alternative Action would cause greater soil disturbance when compared to the Proposed Action as a result of excavating the existing road, as well as grading and compacting 20 feet on either side of the fenceline for the entire length of the road. However, soils in the affected area have been disturbed in the past. Construction activities, predominantly heavy equipment use, have the potential to disturb soils outside of the road bed as well as a result of staging heavy equipment, turning equipment around, and

trampling by construction workers. In addition, the same best management practices and standard erosion control measures would be implemented under the Alternative Action as under the Proposed Action.

4.1.4 No Action

Under the No Action Alternative, existing conditions would remain the same and the proposed upgrades to the perimeter fence and road would not occur. If the No Action Alternative were carried forward, there would be no change in effects on geological resources.

4.2 Water Resources

4.2.1 Evaluation Criteria

Significance criteria for water resources impacts are based on water availability, quality, and use; existence of floodplains; and associated regulations. The impact of flood hazards on a proposed action is potentially significant if such an action is proposed in an area with a high probability of flooding. A potential impact on water resources would be significant if it were to result in one of the following scenarios:

- Reduce water availability to existing users or interfere with the supply.
- Create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources.
- Adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions.
- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations that have been adopted to protect or manage water resources of an area.

4.2.2 Proposed Action

Groundwater. None of the construction activities associated with the Proposed Action would affect groundwater.

Surface Water. Construction activities associated with the Proposed Action have the potential to cause minor, adverse effects on surface water quality. Erosion and sedimentation, as well as the potential for fuel and oil leaks from construction equipment, could cause degradation of nearby surface waters, such as the Turtle River, should such pollutants enter drainages on-Base that

discharge to these surface waters. However, erosion and sediment controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site. In addition, construction contractors would have to adhere to the best management practices outlined in the Spill Prevention, Control, and Countermeasures Plan for Grand Forks AFB. Adherence to proper engineering practices and applicable codes/ordinances, coupled with the implementation of the best management practices described above, would reduce surface water-related impacts to a level of insignificance.

Floodplains. Under the Proposed Action, construction activities related to upgrading the perimeter road could affect floodplains. The perimeter road at Grand Forks AFB passes through a portion of the 100-year floodplain of the Turtle River. Upgrading this road would not change the flood hazard potential in this portion of the floodplain, as the perimeter road has been in this location for some time. Therefore, adverse effects on floodplains as a result of implementing the Proposed Action would be insignificant.

4.2.3 Alternative Action

Groundwater. None of the construction activities associated with the Alternative Action would affect groundwater.

Surface Water. Construction activities associated with the Alternative Action have the potential to cause minor, adverse effects on surface water quality. Erosion and sedimentation, as well as the potential for fuel and oil leaks from construction equipment, could cause degradation of nearby surface waters, such as the Turtle River, should such pollutants enter drainages on-Base that discharge to these surface waters. However, erosion and sediment controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site. In addition, construction contractors would have to adhere to the best management practices outlined in the Spill Prevention, Control, and Countermeasures Plan for Grand Forks AFB. Adherence to proper engineering practices and applicable codes/ordinances, coupled with the implementation of the best management practices described above, would reduce surface water-related impacts to a level of insignificance.

Floodplains. Under the Alternative Action, activities related to the construction of the new perimeter road could affect floodplains. The perimeter road at Grand Forks AFB passes through a portion of the 100-year floodplain of the Turtle River. Reconstructing this road would not change the flood hazard potential in this portion of the floodplain, as the existing perimeter road has been in this

location for some time. Therefore, adverse effects on floodplains as a result of implementing the Alternative Action would be insignificant.

4.2.4 No Action

Under the No Action Alternative, existing conditions would remain the same and the proposed upgrades to the perimeter fence and road would not occur. If the No Action Alternative were carried forward, there would be no change in water resources.

4.3 Biological Resources

4.3.1 Evaluation Criteria

Determination of the significance of potential impacts on biological resources is based on the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, the percentage of the resource that would be affected relative to its occurrence in the region, the sensitivity of the resource to proposed activities, and the duration of ecological ramifications. Impacts on biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas, or if disturbances cause reductions in population size or impact the distribution of a species of high concern.

The significance of impacts on wetland resources is proportional to the functions and values of the wetland complex. Wetlands function as habitat for plant and wildlife populations, including threatened and endangered species that depend on wetlands for their survival. Wetlands are valuable to the public for flood mitigation, storm water runoff abatement, aquifer recharge, water quality improvement, and aesthetics. On a global scale, wetlands are significant factors in the nitrogen, sulfur, methane, and carbon dioxide cycles. These parameters vary from year to year and from season to season. Quantification of wetlands functions and values, therefore, is based on the ecological quality of the site as compared with similar sites, and the comparison of the economic value of the habitat with the economic value of the proposed activity that would modify it. A significant adverse impact on wetlands would occur should either the major function or value of the wetland be significantly altered.

4.3.2 Proposed Action

Vegetation. Under the Proposed Action, tilling the top 3 inches of soil on the existing perimeter road would result in the loss of some vegetative cover in the project area; however, this would be limited to areas that have been previously disturbed and consist mainly of introduced grass species.

Construction activities, predominantly heavy equipment use, have the potential to disturb vegetation outside of the road bed as well as a result of staging heavy equipment, turning equipment around, and trampling by construction workers. Vegetation types that could be affected include shelterbelts, maintained (mowed) airfield grass, landscaped areas, and mixed grasslands dominated by introduced species (such as smooth brome or Kentucky bluegrass). Effects on the River/Creek and Lowland Woodland natural communities are not anticipated. In addition, disturbed areas outside of the road bed would be reseeded with a native-grass-forb mixture once construction is complete. Therefore, effects on vegetation would be insignificant as a result of implementing the Proposed Action.

Wildlife. Minor adverse impacts on wildlife would be expected under the Proposed Action. The presence of people and heavy equipment, in addition to the associated noise, has the potential to disperse wildlife from the project area. However, it is assumed that wildlife are accustomed to some noise associated with aircraft operations and maintenance as well as other on-Base construction activities. Dispersed species might relocate to areas where competition with other species for resources, such as food and cover, is higher. Also, wildlife could be inadvertently trampled by construction equipment or workers. However, construction would not occur until the late summer to avoid wet conditions in the spring and the nesting season for waterfowl or other wildlife.

The loss of approximately 1 acre of wetland habitat contributes to the minor adverse effects on wildlife from implementation of the Proposed Action. Most notably, relatively large populations of white-tailed deer use the wetland areas in the southwest portion of Grand Forks AFB. The presence of people and construction activity, and the direct loss of wetland vegetation, might cause dispersal of deer to areas where competition for resources is higher. However, the potential for expanding the wetland system as a result of installing the culvert in the southwest portion of the Base might offset the loss.

The non-native grassland vegetation that would be lost as a result of tilling the top 3 inches of soil on the existing road would represent a loss of marginal habitat for most wildlife. Although dominated by non-native species, the grassland habitat is relatively important for some bird species (e.g., grasshopper sparrow, vesper sparrows). In Grand Forks County, grassland birds utilize such areas because their prime habitat has been lost to agricultural land uses. The land on the southwest, northwest, and north sides of the Base are considered connective corridors to a landscape-scale ecosystem that extends beyond Base boundaries. Although disturbed areas outside of the road bed would be reseeded with a native-grass-forb mixture, a loss of the grassland habitat noted above would force some grassland birds to disperse to other areas where competition for resources may be higher.

Since the existing road and fence have been there for some time, construction of the new road and fence would have minimal impact on habitat fragmentation.

Although the Turtle River would be avoided, the potential exists that sediment and pollutants would be carried from the project area to the river, both during and after construction. However, the use of erosion and sedimentation controls, as well as spill prevention, control, and countermeasure procedures, would eliminate or minimize the potential effects on species that are dependent on the river system.

Threatened and Endangered Species. Because the gray wolf has not been observed on Grand Forks AFB, the Proposed Action would not affect this species.

It is unlikely that bald eagles passing through the project area would be affected by construction-generated noise. Most state bird species of concern that have been observed on the Base are primarily transients, as low-quality, or a complete lack of, breeding habitat precludes their occurrence. It is assumed that both the bald eagle and the state-listed bird species are accustomed to some noise associated with aircraft operations and maintenance, as well as other on-Base construction activities, and that they would avoid the project area seeking more suitable foraging or nesting habitat. Therefore, effects on the bald eagle and many state-listed bird species of concern would be insignificant under the Proposed Action.

However, the loss of the non-native grassland vegetation on the existing road would represent a loss of relatively important habitat for state-listed grassland bird species such as Baird's sparrow (*Ammodramus bairdii*), LeConte's sparrow (*Ammodramus leconteii*), and the upland sandpiper (*Bartramia longicauda*), among others. In Grand Forks County, grassland birds utilize such areas because their prime habitat has been lost to development and agricultural land uses. The land on the southwest, northwest, and north sides of the Base are considered connective corridors to a landscape-scale ecosystem that extends beyond Base boundaries. Therefore, a loss of this habitat would force some grassland birds to disperse to other areas where competition for resources may be higher. Since the existing road and fence have been there for some time, construction of the new road and fence would have minimal impact on habitat fragmentation. Regardless, impacts to these state-listed grassland bird species would be minor and adverse.

The population of small yellow lady's slippers on Base was documented on the western portion of the airfield, within the airfield security fence, and would not be affected by the Proposed Action.

Wetlands. Under the Proposed Action, construction activities associated with upgrading the perimeter road, including removing vegetation and laying the material for the low-water crossings, would affect prairie pothole wetlands typical of the North Dakota landscape. It is also possible that vehicles could create ruts in these low, wet locations during construction. Seven wetlands, ranging in size from 0.5 acres to 3 acres, would be affected; however, the actual wetland loss is estimated at slightly more than 1 acre (see Figure 4-1). Erosion and sedimentation, as well as the potential for fuel and oil leaks from construction equipment, could cause degradation of wetlands should these pollutants be discharged to wetlands at Grand Forks AFB during construction.

However, erosion and sediment controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site. Construction contractors would have to adhere to the best management practices outlined in the Spill Prevention, Control, and Countermeasures Plan for Grand Forks AFB. The low-water crossings that would be installed in the wetland areas are intended to maintain normal hydrology in these areas and provide a surface for Security Forces personnel to cross without damaging the wetlands, protecting the wetlands over the long term. Cleaned, crushed rock would be used as the overlay for these crossings to avoid the potential for introducing contaminants into the wetlands.

In addition, Grand Forks AFB staff have determined that installing the culvert would allow water to flow on-Base that could enhance a wetland area downstream of the culvert. The wetland would be allowed to develop naturally (without excavating to create a depressional area or planting wetland vegetation), and would enhance an existing wetland system in the area, mitigating the impacts described above (the project is expected to impact approximately 1 acre of wetland, while approximately 1 acre of wetland should be enhanced as a result of mitigation; see Figure 4-1). The unpredictable nature of the water cycle and hydrologic system at Grand Forks AFB makes it difficult to measure the extent to which the existing wetland system will be enhanced. However, this mitigation is anticipated to, at a minimum, improve obligate wetland vegetation cover, with the desired goal of expanding the wetland acreage in this location. Grand Forks AFB personnel would monitor the success of the wetland development using photopoints and analysis of digital data. An adaptive management program would be implemented, as necessary, to ensure that the wetland development proceeds adequately to mitigate the impacts of the Proposed Action. Also, Appendix C presents documentation of the coordination between the Base and the USACE, as required under Section 404 of the CWA. Therefore, effects on wetlands would be insignificant as a result of implementing the Proposed Action.

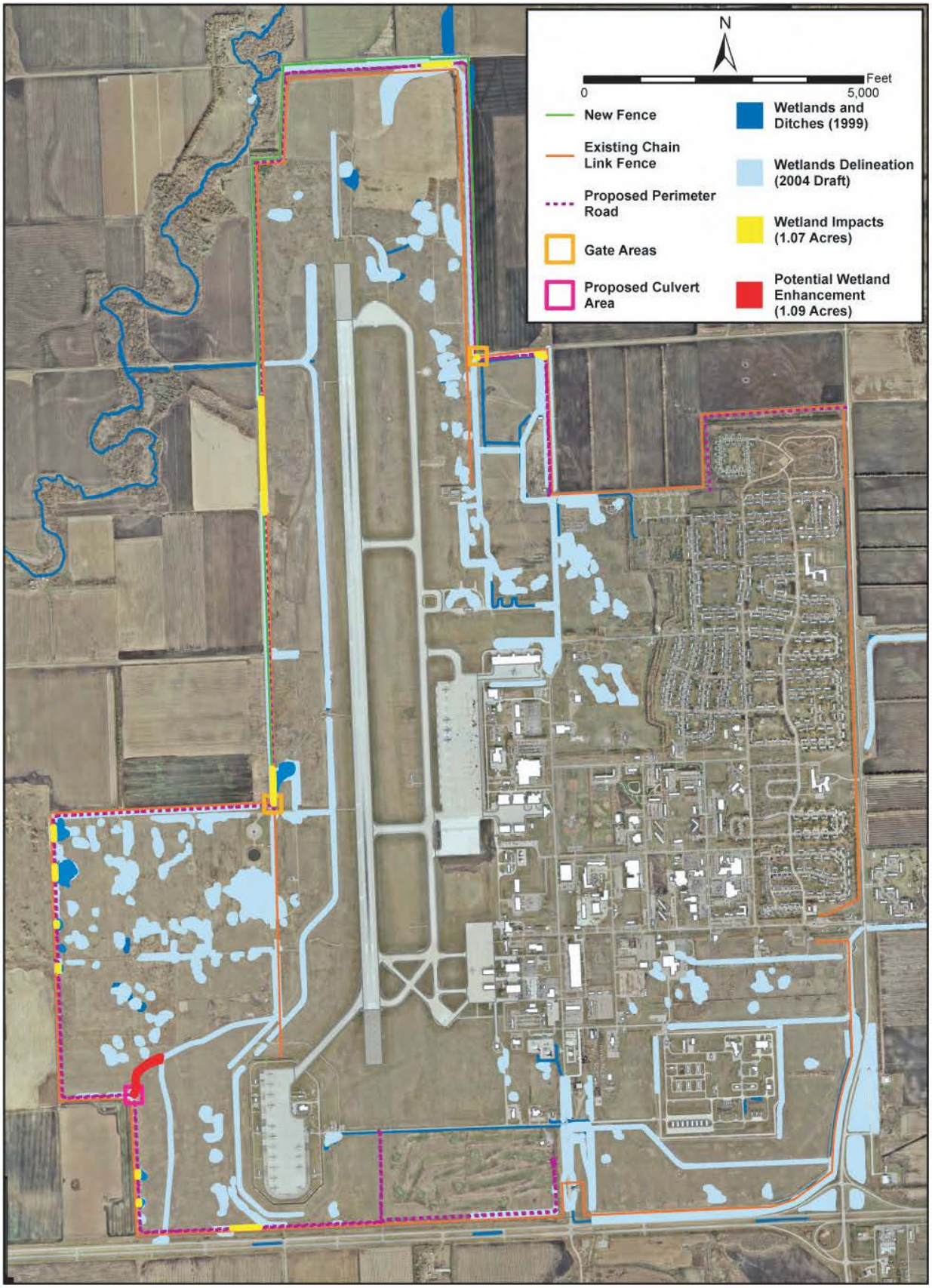


Figure 4-1. Wetland Impacts Under the Proposed Action

4.3.3 Alternative Action

Vegetation. Excavating the existing road and grading/compacting 40 feet (20 feet on either side of the fence) would result in the loss of some vegetative cover, although the portion that would be removed within the existing road bed has been previously disturbed. Construction activities, predominantly heavy equipment use, have the potential to disturb vegetation outside of the road bed as well as a result of staging heavy equipment, turning equipment around, and trampling by construction workers. As with the Proposed Action, vegetation types that could be affected include shelterbelts, maintained (mowed) airfield grass, landscaped areas, and mixed grasslands dominated by introduced species (such as smooth brome or Kentucky bluegrass). However, disturbed areas outside of the road bed would be reseeded with a native-grass-forb mixture once construction is complete. Effects on the River/Creek and Lowland Woodland natural communities would not be expected. Therefore, effects on vegetation would be insignificant as a result of implementing the Alternative Action.

Wildlife. Minor adverse impacts on wildlife would be expected under the Alternative Action. The presence of people and heavy equipment, in addition to the associated noise, has the potential to disperse wildlife from the project area. However, it is assumed that wildlife are accustomed to some noise associated with aircraft operations and maintenance, as well as other on-Base construction activities. The vegetation that would be lost as a result of excavating the existing perimeter road and grading/compacting 40 feet (20 feet on either side of the fence) would represent a loss of wildlife habitat. Although mostly dominated by non-native species, the grassland habitat is especially important for some bird species (e.g., grasshopper sparrow, vesper sparrow). In Grand Forks County, grassland birds use these areas because their prime habitat has been lost to agricultural land uses. The land on the southwest, northwest, and north sides of the Base are considered connective corridors to a landscape-scale ecosystem that extends beyond Base boundaries. Although disturbed areas outside of the road bed would be reseeded with a native-grass-forb mixture, a loss of the grassland habitat noted above would force some grassland birds to disperse to other areas where competition for resources may be higher. Dispersed species might relocate to areas where competition with other species for resources, such as food and cover, is higher. Also, wildlife could be inadvertently trampled by construction equipment or workers. However, construction would not occur until the late summer to avoid wet conditions in the spring and the nesting season for waterfowl or other wildlife.

The loss of approximately 5 acres of wetland habitat contributes to the minor adverse effect on wildlife that would result from implementation of the Proposed Action. Relatively large populations

of white-tailed deer use the wetland areas in the southwest portion of Grand Forks AFB. The presence of people and construction activity, and the direct loss of wetland vegetation, may cause some dispersal of deer to areas where competition for resources is higher. However, the potential for expanding the wetland system as a result of installing the culvert in the southwest portion of the Base might offset this loss. Since the existing road and fence have been there for some time, construction of the new road and fence would have minimal impact on habitat fragmentation.

Although the Turtle River would be avoided, the potential exists that sediment and pollutants would be carried from the project area to the river, both during and after construction. However, the use of erosion and sedimentation controls, as well as spill prevention, control, and countermeasure procedures, would eliminate or minimize the potential effects on species that are dependent on the river system.

Threatened and Endangered Species. Because the gray wolf has not been observed on Grand Forks AFB, the Alternative Action would not affect this species. It is unlikely that bald eagles passing through the project area would be affected by construction-generated noise. State-listed bird species of concern that have been observed on the Base are primarily transients, as low-quality, or a complete lack of, breeding habitat precludes their occurrence. It is assumed that both the bald eagle and these state-listed bird species are accustomed to some noise associated with aircraft operations and maintenance, as well as other on-Base construction activities, and that they would avoid the project area seeking more suitable foraging or nesting habitat. Therefore, effects on the bald eagle and most of the state-listed bird species of concern would be insignificant under the Alternative Action.

However, the loss of the non-native grassland vegetation on the existing road would represent a loss of relatively important habitat for state-listed grassland bird species such as Baird's sparrow, LeConte's sparrow, and the upland sandpiper, among others. In Grand Forks County, grassland birds utilize such areas because their prime habitat has been lost to agricultural land uses. The land on the southwest, northwest, and north sides of the Base are considered connective corridors to a landscape-scale ecosystem that extends beyond Base boundaries. Therefore, a loss of this habitat would force some grassland birds to disperse to other areas where competition for resources may be higher. Since the existing road and fence have been there for some time, construction of the new road and fence would have minimal impact on habitat fragmentation. Impacts to these state-listed grassland bird species would be minor and adverse.

The population of small yellow lady's slippers on Base was documented on the western portion of the airfield, within the airfield security fence, and would not be affected by the Alternative Action.

Wetlands. Under the Alternative Action, construction activities associated with upgrading the perimeter road, including removing vegetation and lying the material for the low-water crossings, would affect prairie pothole wetlands typical of the North Dakota landscape. It is also possible that vehicles could create ruts in these low, wet locations during construction. Seven wetlands, ranging in size from 0.5 acres to 3 acres, would be affected; however, the actual wetland loss is estimated at slightly more than 5 acres (see Figure 4-2). Erosion and sedimentation, as well as the potential for fuel and oil leaks from construction equipment, could cause degradation of wetlands should these pollutants be discharged to wetlands at Grand Forks AFB during construction.

However, erosion and sediment controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site. Construction contractors would have to adhere to the best management practices outlined in the Spill Prevention, Control, and Countermeasures Plan for Grand Forks AFB. The low-water crossings that would be installed in the wetland areas are intended to maintain normal hydrology in these areas and provide a surface for Security Forces personnel to cross without damaging the wetlands, protecting the wetlands over the long term. Cleaned, crushed rock would be used as the overlay for these crossings to avoid the potential for introducing contaminants into the wetlands.

In addition, Grand Forks AFB staff have determined that installing the culvert would allow water to flow on-Base that could enhance a wetland area downstream of the culvert. The wetland would be allowed to develop naturally (without excavating to create a depressional area or planting wetland vegetation), and would enhance an existing wetland system in the area, mitigating some of the impacts described above (the project is expected to impact approximately 5 acres of wetland, while approximately 1 acre of wetland would be enhanced; see Figure 4-2). The unpredictable nature of the water cycle and hydrologic system at Grand Forks AFB makes it difficult to measure the extent to which the existing wetland system will be enhanced. However, this mitigation is anticipated to, at a minimum; improve obligate wetland vegetation cover, with the desired goal of expanding the wetland acreage in this location. Grand Forks AFB personnel would monitor the success of the wetland development using photopoints and analysis of digital data. An adaptive management program would be implemented, as necessary, to ensure that the wetland development proceeds adequately to mitigate the impacts of the Alternative Action. Additional compensatory mitigation would have to be coordinated with the USACE to reduce wetland impacts to insignificant under the Alternative Action.

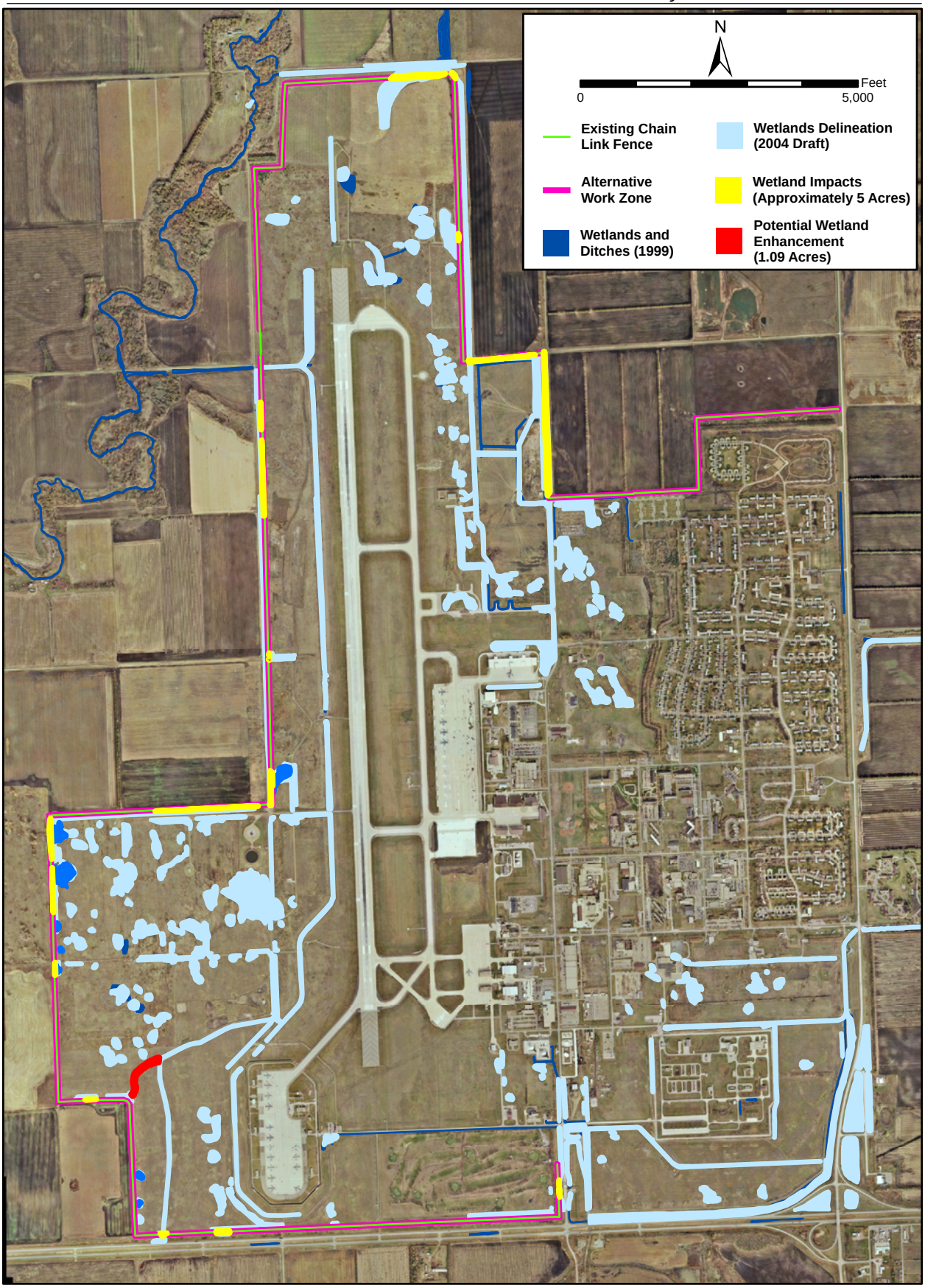


Figure 4-2. Wetland Impacts Under the Alternative Action

4.3.4 No Action

Under the No Action Alternative, existing conditions would remain the same and the proposed upgrades to the perimeter fence and road would not occur. If the No Action Alternative were carried forward, there would be no change in biological resources.

4.4 Cultural Resources

4.4.1 Evaluation Criteria

Potential impacts of the Proposed Action are assessed by: (1) identifying the nature and potential significance of cultural resources in potentially affected areas, and (2) identifying activities that could directly or indirectly affect cultural resources classified as historic properties. Historic properties, under 36 CFR Part 800, are defined as cultural resources included in, or eligible for inclusion in the NRHP. The term "eligible for inclusion" includes both listed and eligible properties, which meet NRHP listing criteria as outlined by 36 CFR 60.4. Therefore, cultural resources not yet evaluated are considered potentially eligible for the NRHP and are afforded the same regulatory consideration as nominated historic properties.

4.4.2 Proposed Action

There are no known cultural resources or culturally sensitive areas within the APE for the Proposed Action. Therefore, there would be no impacts on cultural resources or culturally sensitive areas as a result of implementing the Proposed Action. The project area does cross a known paleosol that would be disturbed as a result of road and fence construction-related activities. Preparing the site and driving fence posts into the ground has the potential to affect the paleosol and potential archeological resources.

Grand Forks AFB consulted with the SHPO to determine the severity of the effects, and any mitigation, as necessary, to offset the impacts to the paleosol. A written request, dated 17 August 2004, was submitted to the SHPO for comments (see Appendix C). The SHPO responded by letter on 27 August 2004 (see Appendix C) and indicated that, for the purposes of section 106 of the NHPA, the determination of effect is "No Historic Properties Affected."

In the event that archaeological resources or human remains are inadvertently discovered, work would stop immediately, and the Standard Operating Procedures (SOPs) outlined in the Grand Forks AFB Integrated Cultural Resources Management Plan would be followed. These SOPs provide

guidance to ensure compliance with 36 CFR 800.13, and the Native American Graves Protection and Repatriation Act, and 40 CFR Part 10.

4.4.3 Alternative Action

There are no known cultural resources or culturally sensitive areas within the APE for the Alternative Action. Therefore, there would be no impacts on cultural resources or culturally sensitive areas as a result of implementing the Alternative Action. The project area does cross a known paleosol that would be disturbed as a result of road and fence construction-related activities. Preparing the site and driving fence posts into the ground have the potential to affect the paleosol and archaeological resources that might be associated with the site, but have not been discovered to date.

Grand Forks AFB would consult with the SHPO to determine the severity of the effects and any mitigation, as necessary, to offset the impacts on the paleosol. Should mitigation be required, it would reduce the impacts on the paleosols to an insignificant level.

In the event that archaeological resources or human remains are inadvertently discovered, the SOPs outlined in the Grand Forks AFB Integrated Cultural Resources Management Plan would be followed. These SOPs provide guidance to ensure compliance with 36 CFR 800.13, the Native American Graves Protection and Repatriation Act, and 40 CFR Part 10.

4.4.4 No Action

Under the No Action Alternative, existing conditions would remain the same and the proposed upgrades to the perimeter fence and road would not occur. If the No Action Alternative were carried forward, there would be no effects on cultural resources.

THIS PAGE INTENTIONALLY LEFT BLANK

5. Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

5.1 Cumulative Impact Analysis

Other projects evaluated in the cumulative impact analysis were identified through a review of public documents, information gained from the IICEP, and coordination with local agencies.

In 2001, Grand Forks AFB finalized a General Plan (319 ARW 2001) that included projections for capital improvement and other projects at the Installation for 15 to 20 years. These projects involve the following developments:

- POL Operations Facility/Hydrant Fuels System Pumphouse (complete)
- Two-Bay Addition to Building 580 (complete)
- KC-135 Apron Extension (Phase I)
- KC-135 Squadron Operations/Aircraft Maintenance Unit Facilities (complete)
- Temporary Lodging Facilities (27 units in two phases; complete)
- Commissary (complete)
- Member's Club (additions and renovations to existing Officer's Club)
- Recreation Area Parking/Pavilion (complete)
- Dog Kennel (adjacent to veterinary clinic; complete)
- Force Protection Improvements–Main Gate (ongoing)
- South Entry Gate Enhancements (ongoing)
- One-Bay Addition to New Fuels Operation Facility
- Base Theater Repairs/Additions
- Education Center Additions
- Air Force Office of Special Investigations Facility Addition (complete)
- Liberty Square Addition (complete)
- Library Addition

- Courtroom Addition (complete)
- Law Enforcement Facility Addition
- Contractor Buildings–Snow (complete), paint (complete), and Military Family Housing
- Music Facility Addition (at Twining Middle School)
- New 1+1 Dormitory Facility
- Medical Construction (Clinic)
- C-Ramp Repair
- Wing Headquarters Facility
- Base Engineer/Contracting Facility (Phase I and Phase II, including expansion of the Readiness building)
- Fire Station
- Consolidated Security Forces Squadron Facility
- Hangar Additions
- Consolidated Base Supply Facility Addition
- Touchless Carwash (complete)
- Youth Center Addition
- First Term Airmen Center
- Central Deployment Center
- Aerospace Ground Equipment Facility Addition
- Sheet Metal Facility Additions
- Community Activity Center Additions

The number of new development activities within the Grand Forks area is generally low and confined to the City of Grand Forks proper. No cumulative impacts related to land use, overall zoning, and land management objectives have been identified as a part of the proposed perimeter road and fence improvements at Grand Forks AFB.

Conversion of native grasslands to cropland in the vicinity of Grand Forks AFB contributes to cumulative impacts on biological resources. Wetland losses occurring throughout the region and State of North Dakota also contribute to cumulative impacts on biological resources.

Geological Resources. The Proposed Action would occur on previously disturbed lands. Construction activities, such as grading, excavating, recontouring, and compacting of the soil, would result in further soil disturbance. The impacts would be permanent, but localized to the immediate vicinity of the existing, disturbed perimeter road, and therefore, would not be significant.

Water Resources. Construction under the proposed action would not increase the percentage of impervious surface area within the Turtle River watershed and there would be no impacts to groundwater resources. Impacts to surface waters could result from erosion and sedimentation, however, adherence to Base plans and other best management practices would reduce these impacts to a level of insignificance. Upgrading this road would not change the flood hazard potential in this portion of the Turtle River floodplain, as the perimeter road has been in this location for some time. No significant cumulative impacts related to water quality, hydrology, or floodplains have been identified.

Biological Resources. The Proposed Action would occur primarily on previously disturbed lands within the footprint of the existing perimeter road and fence. Although non-native vegetation in the existing roadbed would be lost, it does provide habitat for many grassland bird species. Although some wetland acreage would be lost, the potential exists for this loss to be offset through the enhancement of another wetland at Grand Forks AFB as a result of the culvert installation associated with the road improvements. However, the Proposed Action would not lead to significant habitat loss or fragmentation. Although some habitat would be affected, past development practices at the Installation have caused extensive loss of native habitat and natural resources, and have had a greater negative impact on the biological resources than would occur from implementation of the Proposed Action. The cumulative effects of proposed perimeter road and fence improvements would not be significant.

Table 5-1 summarizes potential cumulative effects on resources from the Proposed Action when combined with other past, present, and future activities.

5.2 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the Proposed Action or Alternative Action. None of these impacts would be significant.

Geological Resources. Under the Proposed Action and Alternative Action, construction activities, such as tilling, grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Standard erosion control means would also reduce potential impacts related to these characteristics. Although unavoidable, the effect on soils at Grand Forks AFB is not considered significant.

Table 5-1. Cumulative Effects to Resources Considered in Detail

Resource	Past Actions	Current Background Activities	Proposed Action	Future Actions	Cumulative Effects
Geological Resources	Past development practices have extensively modified soil	None	Tilling, grading, excavating, recontouring, and compacting of the soil would result in further soil disturbance	Future development in previously undisturbed areas would modify soils.	Impacts would be permanent but localized to the Installation, effect not significant
Water Resources	Surface water quality impacted by development, including sedimentation during construction and the addition of impervious surfaces	None	Potential sedimentation from construction activities	Surface water quality potentially impacted by development, including sedimentation during construction and the addition of impervious surfaces	Temporary impacts as a result of the potential for sedimentation during construction, effect not significant
Biological Resources	Degraded historic habitat of sensitive and common wildlife species, including the conversion of native grasslands and loss of wetland habitat	Installation operations impact vegetation and wildlife habitat	Disturbance of vegetation and wetlands by construction. Displacement and potential to kill or injure non-sensitive and sensitive wildlife, especially grassland birds, during construction	Installation operations, including development, impact vegetation and wildlife habitat.	Permanent loss of vegetation and wildlife habitat, effect not significant

Biological Resources. Under the Proposed Action and Alternative Action, construction activities, such as tilling, grading, excavating, and recontouring of the soil, would result in the permanent loss of some vegetation. However, much of this vegetation consists of nonnative species and measures would be taken to minimize impacts on vegetation outside of the existing perimeter road bed. Although unavoidable, the effects on vegetation at Grand Forks AFB are not considered significant.

Construction activities would also result in the loss of wetland habitat under the Proposed and Alternative Action. Grand Forks AFB would take all measures necessary to protect the wetlands during construction, and the installation of low-water crossings in these areas would maintain the hydrology. Although unavoidable, the effects on wetlands at Grand Forks AFB are not considered significant.

The habitat for grassland bird species lost under the Proposed and Alternative Action is mostly marginal habitat, although the lands on the southwest, northwest, and north sides of the Base are considered connective corridors to a landscape-scale ecosystem that extends beyond the Base boundaries. Although unavoidable, the effects on such habitat at Grand Forks AFB are not considered significant.

***Energy*.** The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action and Alternative Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action or Alternative Action.

5.3 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

The proposed project has been sited as necessary to establish an adequate perimeter road and fence. Construction activities would not be in conflict with Base land use policies or objectives. The Proposed Action or Alternative Action would not conflict with any applicable off-Base land use ordinances or designated clear zones.

5.4 Relationship Between Short-term Use and Long-term Productivity

Short-term uses of the biophysical components of man's environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that

occurs over a period of less than 5 years. Long-term uses of man's environment include those impacts occurring over a period of more than 5 years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

Under the Proposed Action and Alternative Action, there is the potential for short-term effects on soils, surface waters, floodplains, vegetation, and wetlands, but only for the duration of the construction activities. It is anticipated that these resources would recover from any realized impacts in less than 5 years. Therefore, the Proposed Action and the Alternative Action would not have any effect on long-term productivity of such resources.

5.5 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Material Resources. Material resources utilized for the Proposed Action or Alternative Action include gravel and crushed concrete, engineering fabric, and metal pipes (for culverts). The materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action or Alternative Action are limited to petroleum-based products (such as gasoline and diesel) that would be irretrievably lost. During construction, gasoline and diesel would be used for the operation of construction vehicles. Future patrols along the perimeter road would also consume gasoline. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Habitat. The Proposed Action or Alternative Action would result in the loss of vegetation that is considered marginal wildlife habitat. Proposed construction is occurring on a previously disturbed area that is dominated by nonnative species. However, the Proposed Action would not remove open space or undeveloped land currently functioning as high-quality biological habitat. Therefore, no significant impacts would be expected.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action or Alternative Action represents employment opportunities and is considered beneficial.

THIS PAGE INTENTIONALLY LEFT BLANK

6. List of Preparers

This EA has been prepared under the direction of Grand Forks AFB. The individuals who contributed to the preparation of this document are listed below.

engineering-environmental Management, Inc. (e^2M)

Suanne Collinsworth
M.S. Environmental Sciences and Engineering
B.S. Geology
Certificate of Water Quality Management
Years of Experience: 7

Tim Demorest
A.M. Classical Studies
B.A. Classical Studies
Years of Experience: 2

Brian Hoppy
B.S. Biology
Certificate of Environmental Management
Years of Experience: 14

Ronald E. Lamb
M.S. Environmental Science
M.A. Political Science/International Economics
B.A. Political Science
Years of Experience: 18

Daniel A. Niosi
B.A. Environmental Studies, Natural Resources
Years of Experience: 5

Daniel M. Savercool
M.S. Biological Oceanography
B.A. Zoology/Marine Science
A.A.S. Natural Resources Conservation
Certified Senior Ecologist, ESA
Certified Forest Stand Delineator
Years of Experience: 20

Rachel Schneider
B.A. Chemistry with Environmental Studies
Years of Experience: 4

Grand Forks AFB

Steve Braun, 319 CES/CEV
Underground Storage Tanks and Special Programs

Everett "Gene" Crouse, 319 OSS/OSAA
Chief, Airfield Management

Mark Hanson, 319 ARW/JA
Contract Attorney

Gary Johnson, 319 CES/SEG
Ground Safety Manager

Chris Klaus, 319 CES/CEV
Water Programs Manager

Heidi Nelson, 319 CES/CEP
Community Planner

Larry Olderbak, 319 CES/CEVR
Enviornmental Restoration Manager

Gary Raknerud, 319 CES/CEVP
Chief, Pollution Prevention

Jim Rosinsky, 319 CES/CEVP
Contract Inspector

Kristen Rundquist, 319 CES/CEVC
Natural Resources/Air Program Manager

Captain Bradley J. Schulte, 319 AMDS/SGGB
Bioenvironmental Engineering Flight Commander

Diane Strom, 319 CES/CEVA
NEPA/EIAP Program

Janelle Sweifel, 319 CES/CEC
Architect

7. References

319 ARW 2001	319 Air Refueling Wing (ARW). 2001. *Grand Forks Air Force Base General Plan*.
319 CES/CEV 2000	319 CES/CEV. 1999. *Final Wetland Identification and Jurisdictional Wetland Delineation of Grand Forks Air Force Base, Grand Forks, North Dakota*. February 2000.
319 CES/CEV 2003	319 CES/CEV. 2003. *Final Integrated Cultural Resources Management Plan for Grand Forks Air Force Base, Grand Forks, North Dakota*. Prepared for Unites States Air Force (USAF) Air Mobility Command (AMC). January 2003.
319 CES/CEV 2004	319 CES/CEV. 2004. *Draft Integrated National Resource Management Plan for Grand Forks Air Force Base, North Dakota*. June 2004.
Crane et al. 1996	Crane, Brian D., Carter Shields, Victoria Roberston, and Julie Abell. 1996. *Grand Forks Air Force Base Cultural Resources Survey*. Prepared for Grand Forks Air Force Base, North Dakota by Parson Engineering Science. September 1996.
GFAFB 2003a	Grand Forks Air Force Base (GFAFB). 2003. *Recommendations for the Agricultural Hay Lease Rehabilitation at Grand Forks Air Force Base, North Dakota*.
GFAFB 2003b	GFAFB. 2003. *Final Noxious Weed and Invasive Plant Control Plan for Grand Forks Air Force Base, North Dakota*.
GFAFB 2004	GFAFB. 2004. *Final Biological Survey Update*. Prepared by BS BioServ, Inc.
NatureServe 2004	NatureServe. 2004. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.0. NatureServe, Arlington, Virginia. Available <*http://www.natureserve.org/explorer*>. Accessed August 4, 2004.
NDNHP 1994	North Dakota Natural Heritage Program (NDNHP). 1994. *Grand Forks Air Force Base Biological Survey, Product No. 4*. Prepared by the North Dakota Natural Heritage Inventory and North Dakota Parks and Recreation Department.
USFWS 2004	U.S. Fish and Wildlife Service (USFWS). 2004. County Occurrence of Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota. Available <*http://northdakotafieldoffice.fws.gov/county_list.htm.*> Accessed September 4, 2004.
USGS 1998	U.S. Geologic Services (USGS). 1998. Central Region Physical Description - Central Lowlands. Available <*http://biology.usgs.gov/cro/d-centrl.htm.*> Accessed January 15, 2004.
USGS 2002	USGS. 2002. Earthquakes Hazard Programs. Available online: <*http://eqhazmaps.usgs.gov/images/2002US_scale.pdf.*> Accessed January 8, 2004

THIS PAGE INTENTIONALLY LEFT BLANK.

APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

When considering the affected environment, physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA) there are other environmental laws as well as Executive Orders (EOs) to be considered when preparing Environmental Assessments (EAs) and Environmental Impact Statements (EISs). These laws are summarized below.

Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (Air Force Instruction [AFI] 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near U.S. Air Force (USAF) installations.

Land Use

Land use guidelines established by the U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) recommend acceptable levels of noise exposure for land use.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQS) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by USEPA as being in attainment or nonattainment for pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action might have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency may also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal-and state-approved requirements.

Safety

AFI 91-202, USAF Mishap Prevention Program, implements *Air Force Policy Directive (AFPD) 91-2, Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program, implements *AFPD 91-3, Occupational Safety and Health*. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities. Compliance with Occupational Safety and Health Administration and other applicable laws and regulations for the protection of employees is exclusively the obligation of the commercial contractor. Government employees must comply with AFOSH.

Water Resources

The Clean Water Act (CWA) of 1977, an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredged and fill

material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands which are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

The Coastal Zone Management Act (CZMA) of 1972 declares a National policy to preserve, protect and develop, and where possible restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, including those around the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to support wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can

be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of Interior upon the recommendation of the Governor of the state(s) through which the river flows.

EO 11988, Floodplain Management, May 24, 1977, directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must insure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially threatened or endangered, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate state's Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act of 1918, amended in 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the Act makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer to sell, barter, purchase, or deliver; or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The Act also makes it unlawful to ship, transport or carry from one state, territory, or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was

obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the Act.

EO 11514 Protection and Enhancement of Environmental Quality, March 5, 1970, states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, Protection of Wetlands, May 24, 1977, directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, Conservation of Migratory Birds, January 10, 2001, creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. The EO provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. The EO provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). The EO will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. The EO requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

Cultural Resources

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on

this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious and cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officer (SHPOs), and the National Register of Historic Places (NRHP). ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the Act directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Native American Graves Protection and Repatriation Act of 1990 establishes rights of Indian tribes to claim ownership of certain "cultural items," defined as Native American human remains,

funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are first the property of lineal descendants if they can be determined, and second, the tribe owning the land where the items were discovered, of the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593 Protection and Enhancement of the Cultural Environment, May 13, 1971, directs the Federal Government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

EO 13007 Indian Sacred Sites, May 24, 1996, provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287 Preserve America, March 3, 2003, orders the Federal Government to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal Government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. The EO established new accountability for agencies with respect to inventories and stewardship.

Socioeconomics and Environmental Justice

EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994, directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address adverse human health and/or environmental effects their activities have on minority and low-income populations, and develop

agency-wide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with this EO lies with each Federal agency.

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal Superfund to respond to emergencies immediately. Although the Superfund provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. *EO 12856, Federal Compliance with Right-to Know Laws and Pollution Prevention Requirements, August 3, 1993*, requires Federal agencies to comply with the provisions of the PPA and requires Federal agencies to ensure all necessary actions are taken to prevent pollution. In addition, in Federal Register Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to "incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for "cradle-to-grave" management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a

waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With *The Hazardous and Solid Waste Amendments (HSWA) of 1984,* Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards, and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with "hazardous substances" or "extremely hazardous substances" to prepare comprehensive emergency plans and to report accidental releases. EO 12856 requires Federal agencies to comply with the provisions of EPCRA. If a Federal agency acquires a contaminated site it can be held liable for the cleanup as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as "owners." However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it may claim the "innocent purchaser" defense under CERCLA. According to Title 42 U.S. Code (U.S.C.) 9601(35), to use this defense, the current owner/operator must show that it undertook "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" before buying the property.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and as a result PCBs are being phased out. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, cleanup, and release reporting requirements for numerous chemicals like PCBs. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and can cause adverse health effects in humans. TSCA Title II provides statutory framework for "Asbestos Hazard Emergency Response," which applies only to schools. TSCA Title III, "Indoor Radon Abatement," states indoor air in U.S. buildings should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, "Lead Exposure Reduction," directs Federal agencies to "conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-

based paint and other lead exposure hazards." Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

APPENDIX B

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE

September 19, 2004

«Salutation» «First_name» «Last_name»
«Title»
«Agency»
«Department»
«Address_1»
«Address_2»
«City_State_Zip»

Dear «Salutation» «Last_name»:

On behalf of the Department of Defense and the 319th Air Refueling Wing, engineering-environmental Management, Inc. (e²M) is preparing an Environmental Assessment for construction of a security perimeter road and fence at Grand Forks Air Force Base, North Dakota. The new road and fence ensure: (1) that unauthorized entry is controlled at the Base via an adequate perimeter fence system, and (2) that Security Forces personnel can access all segments of the Base defensive perimeter, at all times, on a safe, functional, perimeter road. Construction would involve replacing approximately 4.2 miles of three-strand barbed wire perimeter fence as well as upgrading the existing perimeter road for its entire length (approximately 9.17 miles), at Grand Forks AFB. A detailed Description of Proposed Action and Alternatives (DOPAA) is included with this correspondence as Attachment 1.

The environmental impact analysis process for this proposal is being conducted by the Department of Defense in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached DOPAA and solicit your comments concerning the proposal and any potential environmental consequences. Please provide written comments or information regarding the action at your earliest convenience but no later than September 10, 2004. Also enclosed is a listing of the Federal, state, and local agencies that have been contacted (see Attachment 2). If there are any additional agencies that you feel should review and comment on the proposal, please include them in your distribution of this letter and the attached materials.

Please forward your written comments on the proposal to: Mr. Dan Savercool, Project Manager, e²M, 3949 Pender Drive, Suite 120, Fairfax, VA 22030. Written comments can also be sent via fax to: 703-273-1711.

Sincerely,
engineering-environmental Management, Inc.

Daniel M. Savercool
Project Manager

Attachments:
1. Description of Proposed Action and Alternatives
2. Distribution List

ENVIRONMENTAL IMPACT ANALYSIS PROCESS FOR THE CONSTRUCTION OF A SECURITY PERIMETER ROAD AND FENCE AT GRAND FORKS AFB, NORTH DAKOTA

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) List

FEDERAL AGENCIES

Mr. Larry Svoboda
NEPA Unit Chief
U.S. Environmental Protection Agency,
Region 8
999 18th Street, Suite 500
Denver, CO 80202

Ms. Cindy Cody
Environmental Review Coordinator,
U.S. Environmental Protection Agency,
Region 8
999 18th Street, Suite 500
Denver, CO 80202-2466

Mr. Richard Sanderson
U.S. Environmental Protection Agency
Federal Agency Liaison Division, 2251-A
401 M Street, SW
Washington, DC 20460

Mr. Don Kilma
Advisory Council on Historic Preservation
Office of Planning and Review
1100 Pennsylvania Ave., NW #809
The Old Post Office Building
Washington, DC 20004

Mr. Horst Greczmiel
Council on Environmental Quality
360 Old Executive Office Building, NW
Washington, DC 20501

Dr. Willie Taylor
U.S. Department of the Interior
Office of Environmental Policy and Compliance
Main Interior Building , MS 2340
1849 C Street, NW
Washington, DC 20240

Mr. Ralph Thompson
FAA - Airport Program (APP600)
800 Independence Ave, SW
Washington, DC 20591

Mr. Robert F. Stewart
Regional Environmental Office
U.S. Fish and Wildlife Service
P.O. Box 25007 (D-108)
Denver Federal Center
Denver, CO 80225-0007

Ms. Jill Parker
U.S. Fish and Wildlife Services Ecological
Services Contact, Region 6
134 Union Boulevard
Lakewood, CO 80228

Mr. Jeffrey Towner
Field Supervisor
U. S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

Ms. Kris Lee
Forest Service Region
Northern Region
Federal Building
PO Box 7669
Missoula, MT 59807-7769

Ms. Ann M. Hooker
Federal Aviation Administration
Office of Environment and Energy (AEE300)
800 Independence Ave, SW
Washington, DC 20591

Ms. Cecelia Hunziker
FAA
Great Lakes Region
2300 E. Devon Avenue
Des Plaines, IL 60018

Lt. Col John Allen
FAA
FAA, Central Region, ACE
901 Locust Street
Room 450
Kansas City, MO 64106-2641

Ms. Andree DuVarney
U.S. Department of Agriculture
National Resource Conservation Service
14th and Independence Ave., SW
PO Box 2890
Washington, DC 20013

Mr. Rhey Solomon
U.S. Department of Agriculture
Forest Service
PO Box 96090
Washington, DC 20090-6090

Mr. A. Forester Einarsen
USACE
Office of Environmental Policy (CECW-AR-E)
20 Massachusetts Ave.
Washington, DC 20314-1000

USACE
St. Paul District Office
190 Fifth Street East
St. Paul, MN
St. Paul, MN 55101-1638

Mr. Kade Ferris
THPO
Turtle Mountain Band of Chippewa
PO Box 900
Belcourt, ND 58316

Mr. Tim Mentz
THPO
Standing Rock Souix Tribe
PO Box D
Fort Yates, ND 58538

Senator Conrad Kent
530 Hart Senate Office Building
Washington, D.C. 20510
Senator Byron Dorgan
713 Hart Senate Office Building
Washington, D.C. 20510

Congressman Earl Pomeroy
1110 Longworth House Office Building
Washington, DC 20515

STATE REPRESENTATIVES

The Honorable John Hoeven
State Capitol, First Floor
600 East Boulevard Avenue
Bismarck, ND 58505-0001

Dr. Terry Dwelle, State Health Officer
North Dakota Department of Health
600 East Boulevard Avenue, Dept 301
Bismarck, ND 58505-0200

Mr. Dean Hildebrand, Commissioner
North Dakota Game and Fish
100 North Bismarck Expressway
Bismarck, ND 58505-5095

Mr. Jim Boyd, Manager, Governmental Services
North Dakota Division of Community Services
1600 East Century Avenue, Suite 2
P.O. Box 2057
Bismarck, ND 58503-2057

Mr. Merlen E. Paaverud
State Historic Preservation Officer
State Historical Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

LOCAL REPRESENTATIVES

Mr. Gary Malm
Chairman, Grand Forks County Commissioners
151 South 4th Street
P.O. Box 6372
Grand Forks, ND 58206-6372

Ms. Carole McMahon
Zoning Administrator
151 South 4th Street
P.O. Box 5726
Grand Forks, ND 58206-5726

NORTH DAKOTA DEPARTMENT OF HEALTH
Environmental Health Section

Location:
1200 Missouri Avenue
Bismarck, ND 58504-5264

Fax #:
701-328-5200

Mailing Address:
P.O. Box 5520
Bismarck, ND 58506-5520

September 1, 2004

Mr. Dan M. Savercool
Project Manager
e^2M
3949 Pender Drive, Suite 120
Fairfax, VA 22030

Re: Security Perimeter Road and Fence
Grand Forks AFB, Grand Forks County

Dear Mr. Savercool:

This department has reviewed the information concerning the above-referenced project submitted under date of August 23, 2004, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablisment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is

equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA DEPARTMENT OF HEALTH
Environmental Health Section

Location:
1200 Missouri Avenue
Bismarck, ND 58504-5264

Fax #:
701-328-5200

Mailing Address:
P.O. Box 5520
Bismarck, ND 58506-5520

December 2000

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

Grand Forks County

Planning and Zoning

Telephone: (701) 780-8412
Fax: (701) 780-8212
Email: carole.mcmahon@gfcounty.com

Carole B. McMahon

151 S. 4th St.
Mailing Address: P.O. Box 5726
Grand Forks, ND 58206-5726

August 31, 2004

Dan Savercool, Project Manager
Engineering-Environmental Management, Inc.
3949 Pender Drive, Suite 120
Fairfax, VA 22030

Dear Mr. Savercool:

This letter is in regards to the construction of a security perimeter road and fence at the Grand Forks Air Force Base, North Dakota. In my opinion this project is not in conflict with any Grand Forks County zoning regulations in regards to potential environmental consequences.

Sincerely,

Carole B. McMahon
Grand Forks County Zoning Administrator

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
190 FIFTH STREET EAST
ST. PAUL, MN 55101-1638

September 1, 2004

REPLY TO
ATTENTION OF

Project Management and Development Branch
Planning, Programs and Project Management Division

SUBJECT: Grand Forks Air Force Base, North Dakota
Security Perimeter Road and Fence

Mr. Daniel M. Savercool
Project Manager
Engineering-Environmental Management, Inc.
3949 Pender Drive, Suite 120
Fairfax, Virginia 22030

Dear Mr. Savercool:

We are responding to your letter of August 23, 2004, concerning an Environmental Assessment for construction of a security perimeter road and fence at the Grand Forks Air Force Base, North Dakota. Construction would involve replacing 4.2 miles of three-strand barbed wire perimeter fence as well as upgrading the existing perimeter road (approximately 9.17 miles) at the Grand Forks Air Force Base.

No St. Paul District real estate or current projects would be affected by the proposed work.

Although the study area is within the St. Paul District's civil works boundaries, it is within the Omaha District's Regulatory jurisdiction. Therefore, we have forwarded your letter and enclosure to Mr. Jim Winters at the Bismarck Regulatory Office, Omaha District, U.S. Army Corps of Engineers, 1513 South 12th Street, Bismarck, North Dakota 58504 regarding the wetland areas of concern and permit requirements for the project.

Sincerely,

Russel K. Snyder
Project Manager

Grand Forks Herald, Wednesday, February 23, 2005

PUBLIC NOTICE

Notice of Availability
Draft Finding of No Significant Impact/Finding of No Practicable Alternative for the Environmental Assessment of Construction of a Security Perimeter Road and Fence at Grand Forks Air Force Base, North Dakota

Grand Forks Air Force Base, North Dakota – An Environmental Assessment (EA) of Construction of a Security Perimeter Road and Fence at Grand Forks Air Force Base, North Dakota has been prepared. The Air Mobility Command is proposing to issue a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA) based on this EA. The analysis considered potential effects of the Proposed Action, an Alternative Action, and the No Action Alternative on four resource areas: geological resources, water resources, biological resources, and cultural resources. The results, as found in the EA, show that the Proposed Action would not have an adverse impact on the environment, indicating that a FONSI/FONPA would be appropriate. An Environmental Impact Statement should not be necessary to implement the Proposed Action.

Copies of the Draft FONSI/FONPA and EA showing the analysis are available for review at

- Grand Forks Public Library
  2110 Library Circle
  Grand Forks, North Dakota 58201

- Grand Forks Air Force Base Library
  511 Holzapple St
  Grand Forks Air Force Base, North Dakota 58205

Public comments on the Draft FONSI/FONPA and EA will be accepted no later than March 23, 2005.

Written comments and inquiries on the Draft FONSI/FONPA and EA should be directed to: Public Affairs Officer, 319 ARW/PA, 375 Steen Blvd, Grand Forks AFB, North Dakota 58205; telephone (701) 747-5017; or email PA@grandforks.af.mil.

Grand Forks Herald, Thursday, February 24, 2005

PUBLIC NOTICE

Notice of Availability
Draft Finding of No Significant Impact/Finding of No Practicable Alternative for the Environmental Assessment of Construction of a Security Perimeter Road and Fence at Grand Forks Air Force Base, North Dakota

Grand Forks Air Force Base, North Dakota – An Environmental Assessment (EA) of Construction of a Security Perimeter Road and Fence at Grand Forks Air Force Base, North Dakota has been prepared. The Air Mobility Command is proposing to issue a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA) based on this EA. The analysis considered potential effects of the Proposed Action, an Alternative Action, and the No Action Alternative on four resource areas: geological resources, water resources, biological resources, and cultural resources. The results, as found in the EA, show that the Proposed Action would not have an adverse impact on the environment, indicating that a FONSI/FONPA would be appropriate. An Environmental Impact Statement should not be necessary to implement the Proposed Action.

Copies of the Draft FONSI/FONPA and EA showing the analysis are available for review at

- Grand Forks Public Library
  2110 Library Circle
  Grand Forks, North Dakota 58201

- Grand Forks Air Force Base Library
  511 Holzapple St
  Grand Forks Air Force Base, North Dakota 58205

Public comments on the Draft FONSI/FONPA and EA will be accepted no later than March 23, 2005.

Written comments and inquiries on the Draft FONSI/FONPA and EA should be directed to: Public Affairs Officer, 319 ARW/PA, 375 Steen Blvd, Grand Forks AFB, North Dakota 58205; telephone (701) 747-5017; or email PA@grandforks.af.mil.

APPENDIX C

DOCUMENTATION OF AGENCY COORDINATION

DEPARTMENT OF THE AIR FORCE
319TH CIVIL ENGINEER SQUADRON
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

26 JUL 2004

MEMORANDUM FOR US ARMY CORPS OF ENGINEERS
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12th STREET
BISMARCK ND 58504

FROM: 319 CES/CC
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

SUBJECT: Application for Section 404 Permits

1. Please find enclosed the applications for Department of the Army Permits, Section 404. The first project is for culvert replacement on the NE ditch leaving the base. The second project is for the construction of a perimeter road used for security purposes.

2. Please note that the perimeter road project crosses several wetlands. It is planned to install low-water crossings at these junctures to minimize the taking of any wetlands. The wetlands located at site 1 (see enclosed map) were identified as jurisdictional in 1999, as there are connected to the ditch hydrology flowing North.

3. If you have any questions, please direct them to Ms. Kristen Rundquist, Natural Resources Manager, at 701-747-4774. Thank you.

PATRICK F. FOGARTY, Lt Col, USAF
Base Civil Engineer

Attachment:
Applications for Section 404 Department of the Army Permits

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT (33 CFR 325)	OMB APPROVAL NO. 0710-003 Expires October 1996

Public reporting burden for this collection of information is estimated to average 5 hours per response, Including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, Including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: 33USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in, or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Routine Uses; Information provided on this form will be used in evaluating the application for permit. Disclosure; Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies, which show the location and character of the proposed activity, must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THHRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT

5. APPLICANT'S NAME PATRICK F. FOGARTY, Lt Col, USAF Base Civil Engineer	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
6. APPLICANT'S ADDRESS 319 CES/CC 525 Tuskegee Airmen Blvd Grand Forks AFB ND 58205-6434	9. AGENT'S ADDRESS
7. APPLICANT'S PHONE NOS. W/AREA CODE	10. AGENT'S PHONE NOS. W/AREA CODE
a. Residence b. Business (701) 747-4769	a. Residence b. Business

11. STATEMENT OF AUTHORIZATION

I hereby authorize, _____, to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Security Perimeter Road

13. Name of waterbody, if known (if applicable) Many small wetlands along the perimeter, and ditch draining to Turtle River.	14. PROJECT STREET ADDRESS (if applicable) Perimeter of Base.
15. LOCATION OF PROJECT Grand Forks ND COUNTY STATE	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
Base wide, along the perimeter of the installation. See attached map describing Township, Range, and Section locations.

17. DIRECTIONS TO THE SITE
Base wide, along the perimeter of the installation. Due to the fact this is a military installation, please contact 319 CES/CEV, (701) 747-4774, for access to this site.

18. Nature of Activity (Description of project, include all features)

Prepare the site to include excavation and removal of topsoils. This will be done by tilling the old road and adding/compacting any needed clay soils to build up the road. Install 2 – 12" diameter culverts under the road (site 2 on map) and fence line at the south west section to allow for the normal flow of drainage water. Construct wetland low-water crossings as necessary. This will be done by removing the vegetation cover, installing a geo-textile layer, placing 1 1/2" and greater size aggregate, installing a 2nd layer of geo-textile, and placing a final layer of crushed concrete as the roadway. Install new gravel materials providing proper compaction and drainage, Approximately 12' wide x 48,031' long x 1' deep. Silt fencing will be installed on each wetland site and along the northwest ditch (site 5 on attached map), which leads to Turtle River, to control sedimentation problems. Excavation materials of new culvert at site 2 (on attached map) will be filtered on the adjacent grass field. Replace existing barbwire fence with a 7 ft high chain link and 3-strand barbwire fence. This area is identified on the map as "new fence". Heavy equipment will be used to install this fence and posts. Posts will be pushed into the ground. Efforts will be made to minimize rutting in wetlands, as construction should take place in the fall and not during heavy rain events.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the project is to provide a perimeter road of the installation for security purposes. Security Forces personnel should be able to access the base perimeter to ensure the safety of the base to protect against the threats of global terrorism. Wetlands exist along the road site, and during wet conditions the road is impassable. The area is susceptible to damage and rutting from vehicular traffic to include ATV's and full-size trucks.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

No discharge.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

NA

22. Surface Area in Acres of Wetlands or Other Water Filled (see instructions)

NA

23. Is Any Portion of the Work Already Complete? Yes _____ No _____x_____ IF YES, DESCRIBE THE COMPLETED WORK

No work has been completed on this project.

24. Addresses of Adjoining Property Owners, Leasees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, Please attach a supplemental list).

Ditch is located on Grand Forks AFB.

25. List of Other Certifications or Approvals/Denials Received from other Federal, State or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building and flood plain permits

Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I posses the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

26 Jul 04

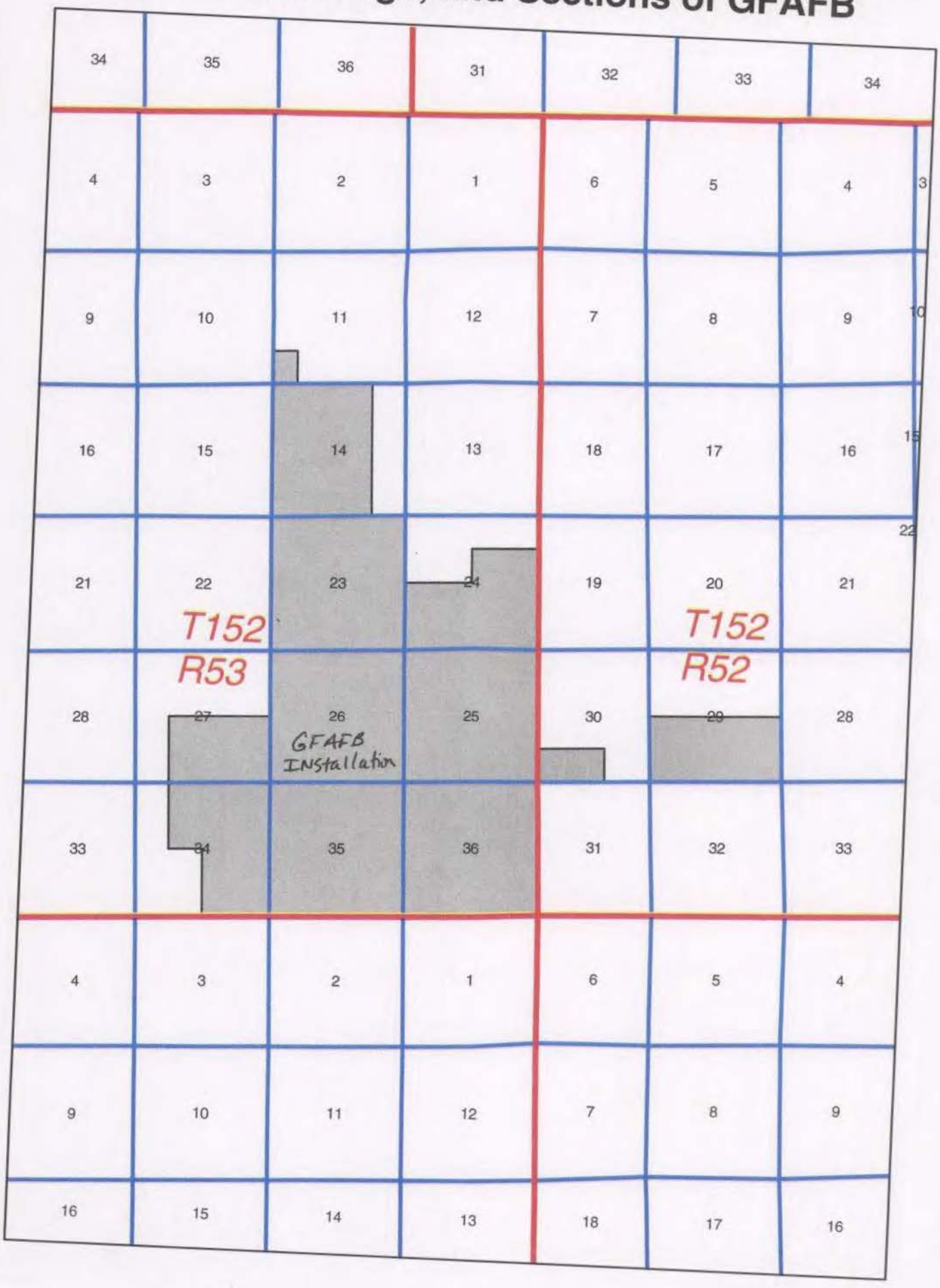
SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

PATRICK F. FOGARTY, Lt Col, USAF
Base Civil Engineer

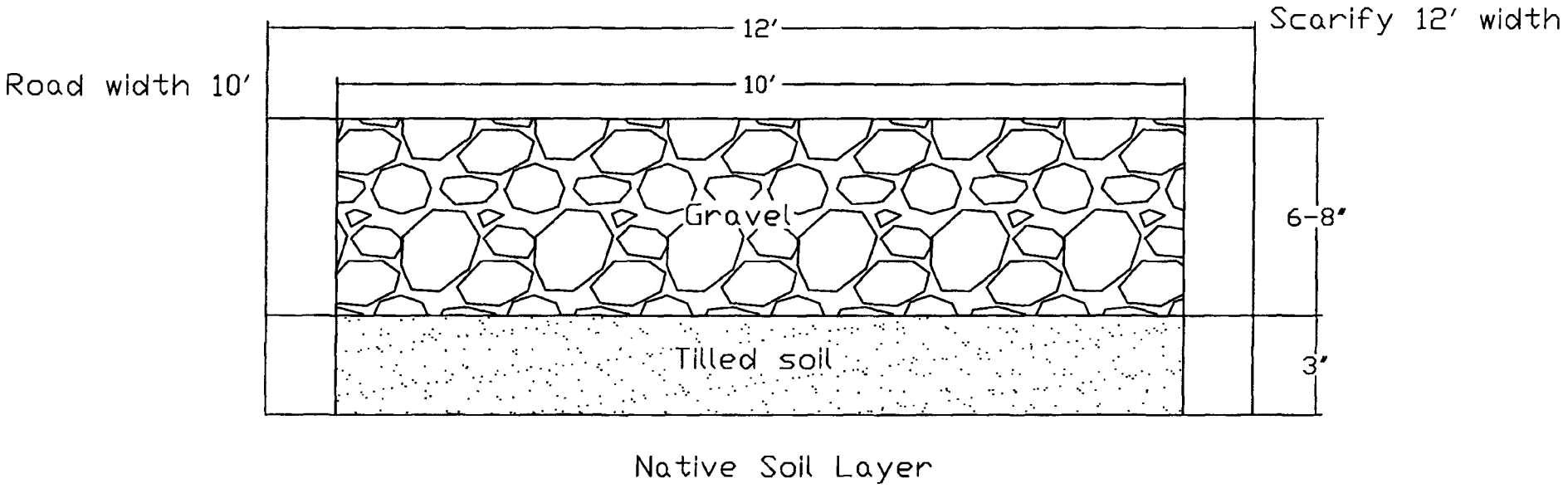
The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or make or use any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

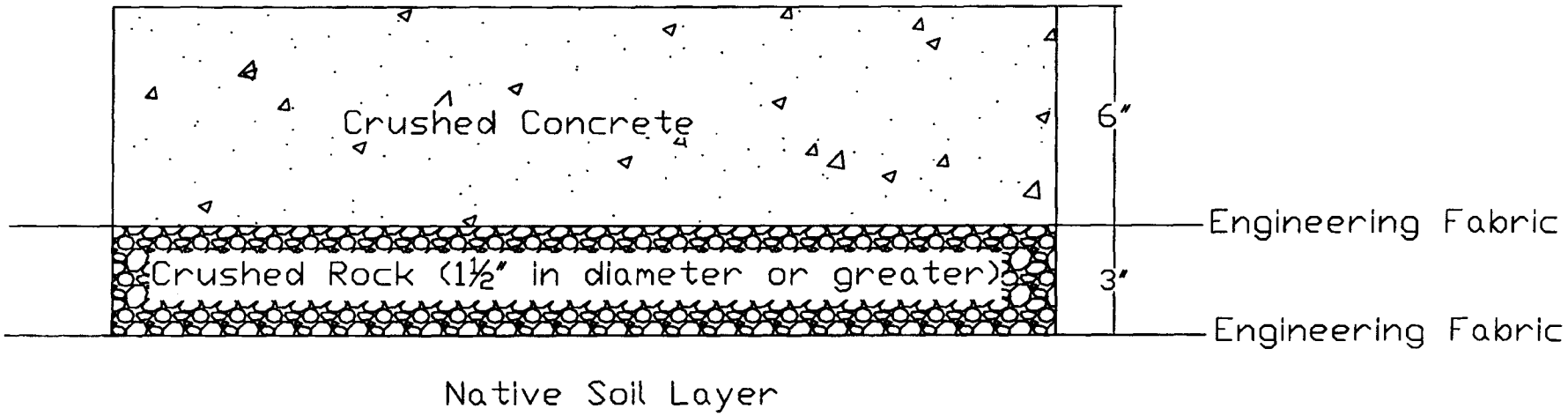
Township, Range, and Sections of GFAFB



Cross Section for Base Perimeter Road



Cross Section for Wetlands




Wetland and Ditch Areas
of Concern for Perimeter Road Project
New Fence
Gate Areas
Existing Chain Link Fence
Proposed Perimeter Road
Proposed 12" Culvert
Wetlands and Ditches
4
5
3
1
2

Wetland Areas of Concern for Perimeter Road Project

Site 1

New Fence

Gate Areas

Existing Chain Link Fence

Proposed Perimeter Road

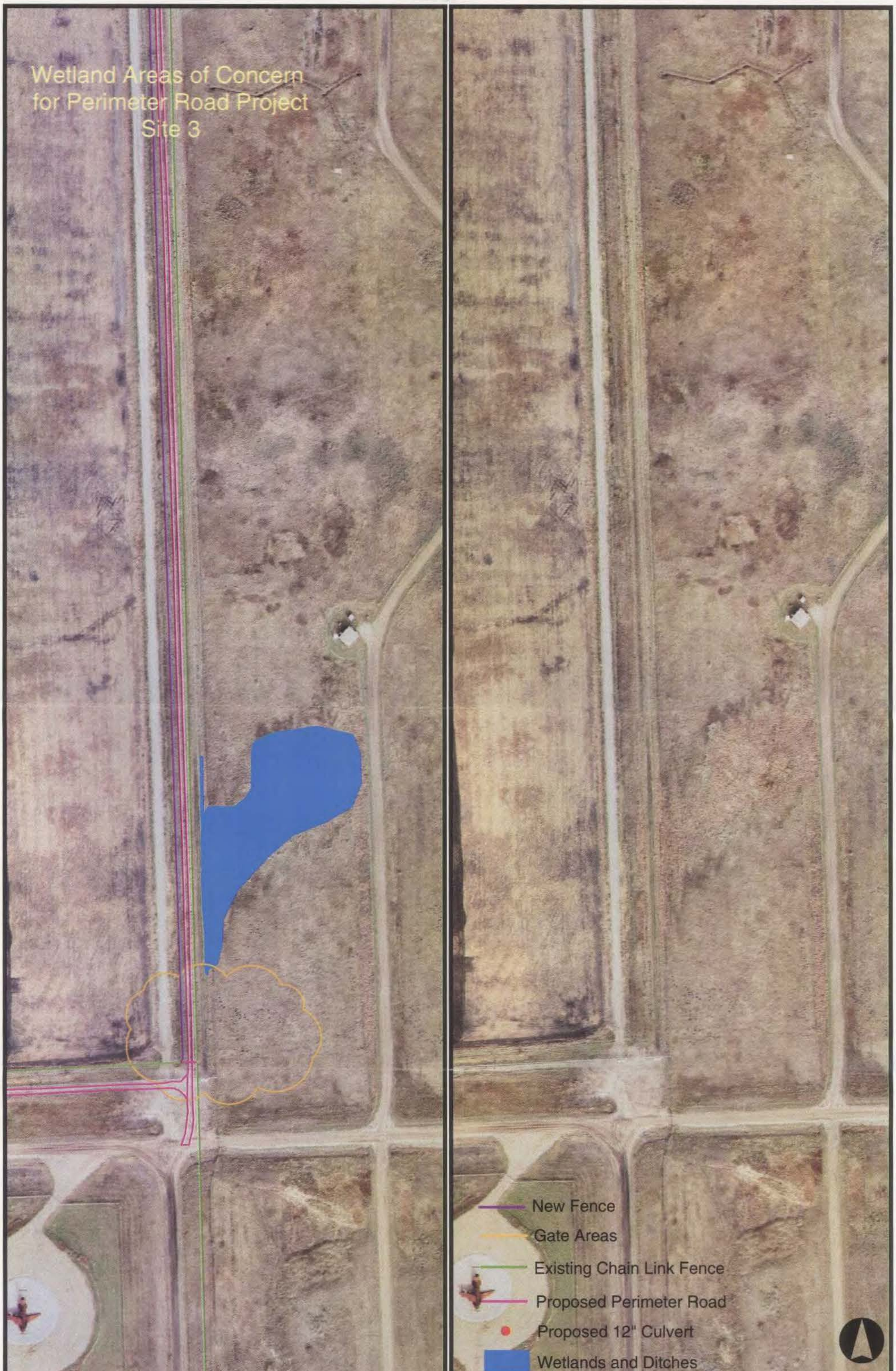
Proposed 12" Culvert

Wetlands and Ditches

Wetland Areas of Concern for Perimeter Road Project Site 2

New Fence
Gate Areas
Existing Chain Link Fence
Proposed Perimeter Road
Proposed 12" Culvert
Wetlands and Ditches

Wetland Areas of Concern for Perimeter Road Project Site 3



Wetland Areas of Concern for Perimeter Road Project Site 4

New Fence
Gate Areas
Existing Chain Link Fence
Proposed Perimeter Road
Proposed 12" Culvert
Wetlands and Ditches

Wetland Areas of Concern for Perimeter Road Project Site 5

New Fence

Gate Areas

Existing Chain Link Fence

Proposed Perimeter Road

Proposed 12" Culvert

Wetlands and Ditches


Site 1A
9 10:33 AM


Site 1A
9 10:33 AM


Site 1B
9 10:19 AM


Site 1C
8 10:03 AM


Site 1B
9 10:17 AM


Site 1D
9 9:56 AM


Site 1D
9 9:57 AM

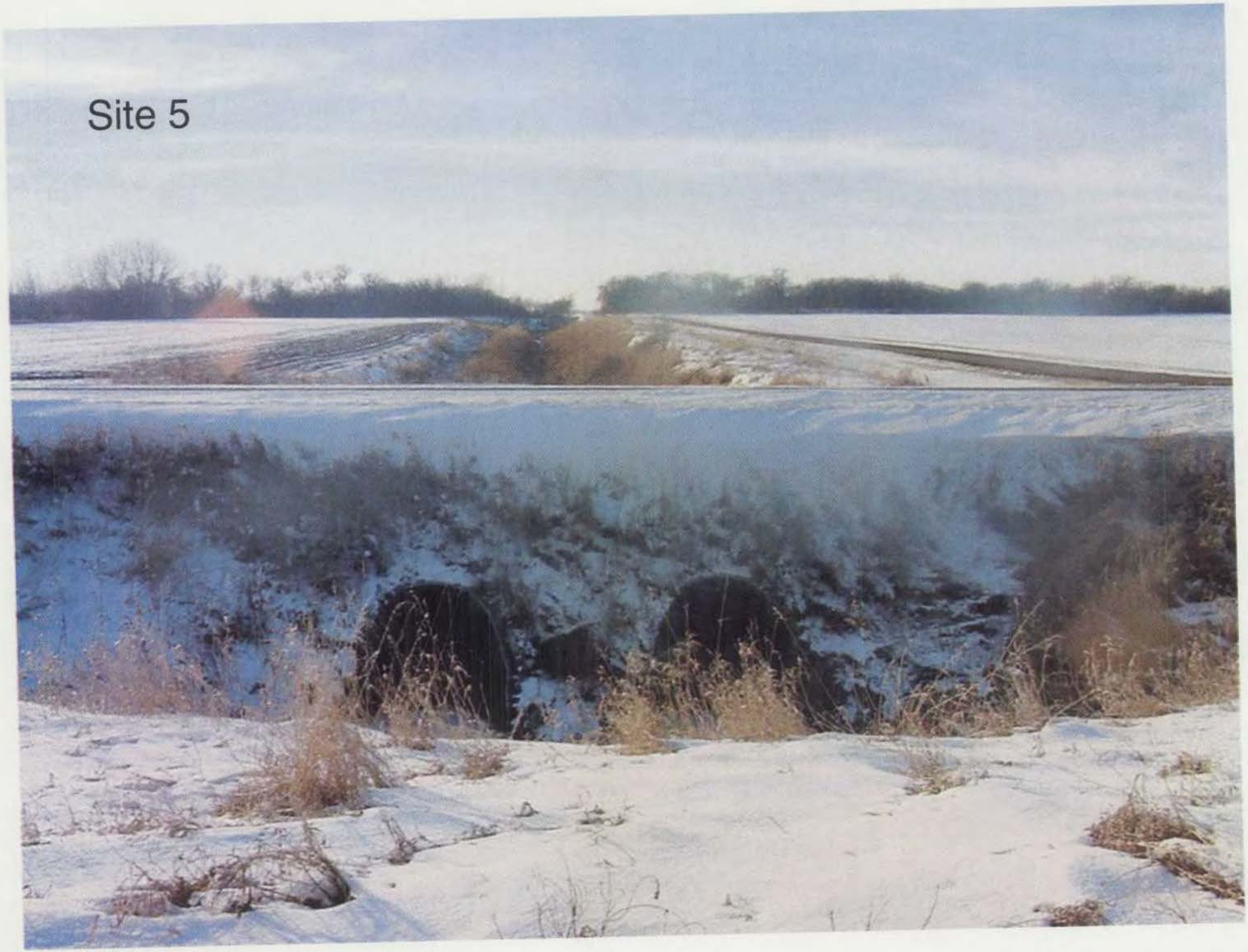

Site 2A
8 9:42 AM


Site 2A
9 9:42 AM


Site 2B
9 9:38 AM


Site 3
9 11:14 AM


Site 4
OCT 8 2003


Site 5

U.S. Army Corps of Engineers
North Dakota Regulatory Office
1513 South 12th Street
Bismarck, North Dakota 58504
Telephone (701) 255-0015 Fax (701) 255-4917

CEV —

IMPORTANT INSTRUCTIONS FOR OUR PERMIT CUSTOMERS

On January 15, 2002 Nationwide General Permits were published in the Federal Register [Vol. 67, No. 10, Part II][1]. Project compliance certification is required by General Condition 14. The following instructions are provided to clarify the information contained within the nationwide permit authorization letter and attachments.

STEP 1
Review the permit authorization and be sure you understand the terms and conditions for the authorization to remain valid. If you do not understand, or have any questions, please do not hesitate to contact this office at the above address.

STEP 2
Complete your project in accordance with the permit terms and conditions. [Remember that any deviation from the original plans and specifications of your project could require additional authorization from this office.]

STEP 3
Within thirty (30) days of project completion, please complete the permit compliance certification contained within your permit authorization letter. A photocopy of the first page (marked with a colored COPY stamp) has been provided for this purpose. Mark the applicable statements, sign and date where indicated, and forward the COPY to this office at the above address.

---

[1]There is no charge associated with any aspect of this nationwide authorization or the follow-up compliance certification.

COPY

CENWO-OD-RND (1145b) 16 August 2004

MEMORANDUM FOR: USAF, Grand Forks Air Force Base, ATTN: LTC Patrick F. Fogarty, Base Civil Engineer, 319 CES/CD, 525 Tuskegee Airman Boulevard, Grand Forks AFB, North Dakota 58205-6434

SUBJECT: Security Perimeter Road Construction [Authorization No. 200460525]

1. **Project Authorization.** We have reviewed your 26 July 2004 request for Department of the Army authorization to construct a perimeter road for security purposes on the Grand Forks AFB. Based on the information you provided, this office has determined that your work is authorized by Department of the Army Nationwide Permit No. 14, found in the January 15, 2002 Federal Register (Vol. 67, No. 10, Part II), Issuance of Nationwide Permits. Enclosed is a fact sheet that fully describes this permit and lists the General Conditions and the Section 401 Water Quality Certification Requirements, if applicable, that must be followed for this authorization to remain valid. This authorization is valid until **16 August 2006**.

2. **Project Location.** The legal description at the project site is Sections 14, 23, 26, 27 and 34, Township 152 North, Range 53 West, Grand Forks County, North Dakota.

3. ***Project Compliance Certification.*** *In compliance with General Condition 14, you are required to submit the following project compliance certification thirty (30) days after project completion. [Please check all applicable statements.]*

a. [ ] *I certify that I have completed the project as permitted.*
b. [ ] *I certify that I have completed a modified version of the project.*
c. [ ] *I certify that I have completed all required mitigation.*

Permittee's Signature: _____ ***Date:*** _____

4. **Other Authorizations.** Although an Individual Department of the Army permit will not be required for the project, this does not eliminate the requirement that you obtain any other applicable federal, state, tribal, and local permits as required. **Please note, any deviations from the original plans and specifications of your project could require additional authorization from this office.**

5. **Responsibility.** You are responsible for all work accomplished in accordance with the terms and conditions of the nationwide permit. If a contractor or other authorized representative will be accomplishing the work authorized by the nationwide permit on your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable nationwide permit. Any activity which fails to comply with the terms and conditions of the nationwide permit will be considered unauthorized and subject to the appropriate enforcement action.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 S. 12TH STREET
BISMARCK, NORTH DAKOTA 58504-6640

REPLY TO
ATTENTION OF

CENWO-OD-RND (1145b)

16 August 2004

MEMORANDUM FOR: USAF, Grand Forks Air Force Base, ATTN: LTC Patrick F. Fogarty, Base Civil Engineer, 319 CES/CD, 525 Tuskegee Airman Boulevard, Grand Forks AFB, North Dakota 58205-6434

SUBJECT: Security Perimeter Road Construction [Authorization No. 200460525]

1. **Project Authorization.** We have reviewed your 26 July 2004 request for Department of the Army authorization to construct a perimeter road for security purposes on the Grand Forks AFB. Based on the information you provided, this office has determined that your work is authorized by Department of the Army Nationwide Permit No. 14, found in the January 15, 2002 Federal Register (Vol. 67, No. 10, Part II), Issuance of Nationwide Permits. Enclosed is a fact sheet that fully describes this permit and lists the General Conditions and the Section 401 Water Quality Certification Requirements, if applicable, that must be followed for this authorization to remain valid. This authorization is valid until **16 August 2006**.

2. **Project Location.** The legal description at the project site is Sections 14, 23, 26, 27 and 34, Township 152 North, Range 53 West, Grand Forks County, North Dakota.

*3. **Project Compliance Certification.** In compliance with General Condition 14, you are required to submit the following project compliance certification thirty (30) days after project completion. [Please check all applicable statements.]*

a. [ ] I certify that I have completed the project as permitted.
b. [ ] I certify that I have completed a modified version of the project.
c. [ ] I certify that I have completed all required mitigation.

***Permittee's Signature:** _____ **Date:** _____*

4. **Other Authorizations.** Although an Individual Department of the Army permit will not be required for the project, this does not eliminate the requirement that you obtain any other applicable federal, state, tribal, and local permits as required. **Please note, any deviations from the original plans and specifications of your project could require additional authorization from this office.**

5. **Responsibility.** You are responsible for all work accomplished in accordance with the terms and conditions of the nationwide permit. If a contractor or other authorized representative will be accomplishing the work authorized by the nationwide permit on your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable nationwide permit. Any activity which fails to comply with the terms and conditions of the nationwide permit will be considered unauthorized and subject to the appropriate enforcement action.

6. **Other Special Conditions.** The US Air Force is recognized as the lead Federal agency responsible for compliance with the National Environmental Policy Act, the Endangered Species Act and Section 106 of the National Historic Preservation Act.

Endangered Species Should you observe any threatened or endangered species at the project site, you are responsible for providing notification to the US Fish and Wildlife Service. To ensure the administrative record for this action is complete, any siting should also be reported to the North Dakota Regulatory Office within 48 hours.

Cultural Resources Should you or your contractor, or any of the employees, subcontractors or other persons working in the performance of a contract or contract(s) to complete the work authorized herein, shall cease work immediately and report the discovery of any previously unknown historic or archeological remains to the North Dakota State Historic Preservation Office. You shall be responsible to initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places. To ensure the administrative record for this action is complete, any discovery should also be reported to the North Dakota Regulatory Office within 48 hours of discovery.

7. **Points-of-Contact.** If you have any questions concerning this determination, please contact this office by letter or telephone me, or **Toni R. Erhardt** of my staff, at 255-0015, and reference Authorization Number **200460525**.

Enclosure

for JAMES L. WINTERS
State Program Manager
North Dakota

FACT SHEET
NATIONWIDE PERMIT 14

LINEAR TRANSPORTATION CROSSINGS: Activities required for the construction, expansion, modification, or improvement of linear transportation crossings (e.g., highways, railways, trails, airport runways and taxiways) in waters of the United States, including wetlands, if the activity meets the following criteria:

a. This NWP is subject to the following acreage limits:
(1) For linear transportation projects in non-tidal waters, provided the discharge does not cause the loss of greater than 1/2-acre of waters of the U.S.; or
(2) For linear transportation projects in tidal waters, provided the discharge does not cause the loss of greater than 1/3-acre of waters of the U.S.

b. The permittee must notify the District Engineer if any of the following criteria are met:
(1) The discharge causes the loss of greater than 1/10 acre of waters of the United States; or
(2) There is a discharge in a special aquatic site, including wetlands;

c. The notification must include a compensatory mitigation proposal to offset permanent losses of waters of the United States to ensure that those losses result only in minimal adverse effects to the aquatic environment and a statement describing how temporary losses will be minimized to the maximum extent practicable;

d. For discharges in special aquatic sites, including wetlands, and stream riffle and pool complexes, the notification must include a delineation of the affected special aquatic sites;

e. The width of the fill is limited to the minimum necessary for the crossing;

f. This permit does not authorize stream channelization, and the authorized activities must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality of any stream (see General Conditions 9 and 21);

g. This permit cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars; and

h. The crossing is a single and complete project for crossing waters of the United States. Where a road segment (i.e., the shortest segment of a road with independent utility that is part of a larger project) has multiple crossings of streams (several single and complete projects) the Corps will consider whether it should use its discretionary authority to require an individual permit. (Sections 10 and 404)

Note: Some discharges for the construction of farm roads, forest roads, or temporary roads for moving mining equipment may be eligible for an exemption from the need for a Section 404 permit (See 33 CFR 323.4).

General Conditions: The following general conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation: No activity may cause more than a minimal adverse effect on navigation.

2. Proper Maintenance: Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.

3. Soil Erosion and Sediment Controls: Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

4. Aquatic Life Movements: No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

5. Equipment: Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.

6. Regional and Case-By-Case Conditions: The activity must comply with any regional conditions which may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the State or tribe in its Section 401 water quality certification.

7. Wild and Scenic Rivers: No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

8. Tribal Rights: No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

9. Water Quality:

(a) In certain states and tribal lands an individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)).

(b) For NWP 14, where the state or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management

requirements). Another important component of water quality management is the establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWPs).

This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.
Specifically for North Dakota, the North Dakota Department of Health has issued water quality certification for projects under this Nationwide Permit provided all fill materials are obtained from an upland source, are free of topsoils and the attached Construction and Environmental Compliance Requirements are followed. On American Indian Lands in North Dakota, the U.S. Environmental Protection Agency, Region 8, has issued water quality certification for projects under this Nationwide Permit provided the attached General Conditions for Nationwide Permits dated March 11, 2002 are followed and the following conditions are met: 1) Stormwater resulting from both the construction and operation of these authorized projects must be routed into constructed runoff water quality control systems (e.g. sediment basins, wet ponds, etc.) in order to eliminate sediment and other pollutants prior to entry of stormwater into waters of the United States, 2) Affected steambanks must be sloped such that the stream bottom width is not reduced and bottom elevations are restored to original elevations, 3) Crossings must be place as close to perpendicular to the water course as possible, and 4) The upland and riparian areas adjacent to all sides of the crossing must be revegetated in all directions from the banks of the tributary with native vegetation that is common to the geographical area. Native plants shall be planted in all disturbed areas and artificial soil stabilizing material (e.g. mulch, matting, netting, etc.) shall be used to reduce soil erosion. These materials, to include all plants and plant seed, shall be on site prior to or upon completion of the earth moving activities.

10. Coast Zone Management: ***Not applicable.***

11. Endangered Species: (a) No activity is authorized which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which will destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS), the District Engineer may add species-specific regional endangered species conditions to the NWPs.

(b) Authorization of any activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the Federal Endangered Species Act. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the Endangered Species Act. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at
http://www.fws.gov/r9endspp/endspp.html and
http://www.nfms.noaa.gov/prot_res/overview/es.html respectively.

12. Historic Properties: No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

13. Notification: ***See attached sheets.***

14. Compliance Certification: Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter. The certification will be forwarded by the Corps with the authorization letter and will include: (a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions; (b) A statement that any required mitigation was completed in accordance with the permit conditions; and (c) The signature of the permittee certifying the completion of the work and mitigation.

15. Use of Multiple Nationwide Permits: The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3 acre).

16. Water Supply Intakes: No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

17. Shellfish Beds: No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.

18. Suitable Material: No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

19. Mitigation: The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset adverse effects on the aquatic environment that are more than minimal.

(a) The project must be designed and constructed to avoid and minimize adverse effects to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring notification, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.

(d) Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, 1/4-acre of wetlands cannot be created to change a 3/4-acre loss of wetlands to a 1/2-acre loss associated with NWP 39 verification. However, 1/2-acre of created wetlands can be used to reduce the impacts of a 1/2-acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.

(e) To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purpose. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineer may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.

(g) Compensatory mitigation proposals submitted with the notification may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the United States.

(h) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

20. Spawning Areas: Activities, including structures and work in navigable waters of the United States or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the

physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of an important spawning area are not authorized.

21. Management of Water Flows: To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelization will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow.

This condition is only applicable to projects that have the potential to affect water flows. While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.

22. Adverse Effects From Impoundments: If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restriction of its flow, shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the United States, or discharges of dredged or fill material.

23. Waterfowl Breeding Areas: Activities, including structures and work in navigable waters of the United States or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

24. Removal of Temporary Fills: Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

25. Designated Critical Resources Waters: Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, State natural heritage sites, and outstanding national resource waters or other waters officially designated by a State as having particular environmental or ecological significance and identified by the District Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Except as noted below, discharges of dredged or fill material into waters of the United States are not authorized by NWP 14 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the United States may be authorized in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service has concurred in a determination of compliance with this condition.

26. Fills Within 100-Year Floodplains: The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.

27. Construction Period: For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12 months after such date (including any modification that affects the project).

For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps.

For projects that have been verified by the Corps, an extension of a Corps approved completion date may be requested. This request must be submitted at least one month before the previously approved completion date.

Further Information:

1. District Engineers have authority to determine if any activity complies with the terms and conditions of a NWP.

2. NWPs do not obviate the need to obtain other Federal, State, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

General Condition 13. Notification:

(a) Timing: Where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the notification is complete within 30 days of the date of receipt and can request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the notification is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

(2) If notified in writing by the District or Division Engineer that an individual permit is required; or

(3) Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Notification: The notification must be in writing and include the following information:

(1) Name, address, and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (sketches usually clarify the project and when provided result in a quicker decision);

(4) For NWP 14, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));

(5) **Not applicable to NWP 14.**

(6) For NWP 14, the PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the United States and a statement describing how temporary losses of waters of the United States will be minimized to the maximum extent practicable.

(7) thru (16) **Not applicable to NWP 14.**

(17) For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work.

(18) For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

(c) Form of Notification: The standard individual permit application form (Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b)(1)-(18) of General Condition 13. A letter containing the requisite information may also be used.

(d) District Engineer's Decision: In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more

than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary. The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed compensatory mitigation plan. The District Engineer must review the plan within 45 days of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the District Engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitigation plan is required under item (2) above, no work in waters of the United States will occur until the District Engineer has approved a specific mitigation plan.

(e) Agency Coordination: The District Engineer will consider any comments from Federal and State agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

For activities requiring notification to the District Engineer that result in the loss of greater than 1/2 acre of waters of the United States, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, State natural resource or water quality agency, EPA, and State Historic Preservation Officer (SHPO), and if appropriate, the NMFS). These agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered.

Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.

(f) Wetlands Delineations: Wetlands delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate.

NORTH DAKOTA DEPARTMENT OF HEALTH
Environmental Health Section

Location:
1200 Missouri Avenue
Bismarck, ND 58504-5264

Fax #:
701-328-5200

Mailing Address:
P.O. Box 5520
Bismarck, ND 58506-5520

December 2000

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

ENVIRONMENTAL PROTECTION AGENCY, REGION 8

WATER QUALITY CERTIFICATION IN ACCORDANCE WITH SECTION 401 OF THE CLEAN WATER ACT FOR THE 2002 NATIONWIDE PERMITS IN INDIAN COUNTRY

March 11, 2002

A. General Conditions for Nationwide Permits

1) Certification is denied for any activity affecting fens and springs.

Note: EPA adopts the definition of these aquatic resources as defined by the Corps in the 1999 Regional Conditions.

2) This certification does not authorize the placement or construction of septic/leach systems or other sewage treatment plants in wetlands.

3) This certification does not authorize construction of dams, except for stream restoration projects.

4) This certification does not authorize the construction of any portion of a facility for a confined animal feeding operation, including, but not limited to, the construction of buildings and sewage lagoons and/or livestock holding areas.

5) Wetland mitigation, including conversion of a forested wetland type to a herbaceous wetland, under these nationwide permits shall be completed prior to or concurrent with the project impacts.

6) For any general or specific nationwide permit conditions requiring notification in accordance with the notification general condition (i.e., Federal Register, Vol. 65, No. 47, Thursday, March 9, 2000, Part C.13 (e)), "Agency Coordination" for project activities shall include coordination with Native American Tribe or Tribes affected by such project activities.

7) This certification requires the use of certified weed-free hay with any revegetation of project areas for activities authorized under these nationwide permits.

8) This certification requires monitoring and control of invasive species after project completion pursuant to the Invasive Species Executive Order 13112.

9) This certification requires all equipment be inspected for oil, gas, diesel, anti-freeze, hydraulic fluid and other petroleum leaks. All such leaks will be properly repaired prior to the equipment being allowed on the project. Leaks that occur after the equipment is moved to the project site will be fixed that same day or the next day or removed from the

project area. The equipment is not allowed to continue operating once the leak is discovered.

10) This certification does not authorize any unconfined discharge of liquid cement in waters of the U.S.. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the stream/lake.

11) All discharges must occur during the low flow or no flow period of the season.

DEPARTMENT OF THE AIR FORCE
319TH CIVIL ENGINEER SQUADRON
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

17 AUG 2004

Wayne A. Koop
525 Tuskegee Airmen Blvd
Grand Forks AFB ND 58205-6434

Merlan E Paaverud
State Historic Preservation Officer
State Historical Society of North Dakota
612 East Boulevard Ave
Bismarck ND 58505-0200

RE: Grand Forks Air Force Base Perimeter Road

Dear Mr. Paaverud:

1. Grand Forks Air Force Base has proposed actions to construct/improve the perimeter road. During the cultural resources survey in 1996 at GFAFB no significant archeology spots were located. A couple areas containing paleosols were noted at depths 60 cm, 90 cm, and 116 cm below the surface (GFAFB Cultural Resources Survey, 1996). The proposed perimeter road is located in one of these areas. Please review the attached maps regarding project locations relative to cultural resource issues.

2. The purpose of the project is to provide a perimeter road of the installation for security purposes. Security Forces personnel must access the base perimeter to ensure the safety of the base against threats of global terrorism

3. Preparation of the road site will include excavation and removal of topsoils. This will be done by tilling the old road and adding/compacting any needed clay soils to build up the road. Install 2 – 12" diameter culverts under the road (site 2 on map) and fence line at the south west section to allow for the normal flow of drainage water. Construct wetland low-water crossings as necessary. This will be done by removing the vegetation cover, installing a geo-textile layer, placing 1 1/2" and greater size aggregate, installing a 2nd layer of geo-textile, and placing a final layer of crushed concrete as the roadway. Install new gravel materials providing proper compaction and drainage, Approximately 12' wide x 48,031' long x 1' deep. Silt fencing will be installed on each wetland site and along the northwest ditch (site 5 on attached map), which leads to Turtle River, to control sedimentation. Excavation materials from installation of the new culvert at site 2 (on attached map) will be filtered on the adjacent grass field. Replace existing barbed-wire fence with a 7 ft high chain link and 3-strand barbed-wire fence. This area is identified on the map as "new fence". Heavy equipment will be used to install this fence and posts. Posts will be pushed into the ground. Efforts will be made to minimize rutting in wetlands, as construction should take place in the fall and not during heavy rain events.

3. Please review the enclosed documents for your reference, and send comments to Ms Kristen Rundquist, 319 CES/CEVC at the address above.

Sincerely,

WAYNE A. KOOP, R.E.M.
Environmental Management Flight Chief

Attach:
Maps

STATE HISTORICAL SOCIETY of North Dakota

August 27, 2004

Kristen Rundquist
319 CES/CEVA
525 Tuskegee Airmen Blvd
Grand Forks AFB, ND 58205-6434

ND SHPO Ref.: 97-0527aq, Perimeter Road Improvement, Grand Forks AFB, ND.

Dear Ms. Rundquist:

We have reviewed Project: 97-0527aq, proposed construction and improvements to the perimeter road at the Grand Forks AFB.

We concur with "No Historic Properties Affected" determination provided the project is of the nature specified and takes place in the legal descriptions outlined and mapped in the correspondence.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in any further correspondence for this specific project. If you have any questions please contact Duane Klinner at (701) 328-3576.

Sincerely,

Duane Klinner for

Merlan E. Paaverud, Jr.
State Historic Preservation Officer
(North Dakota)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

OCT - 4 2004

Mr. Daniel M. Savercool, Project Manager
Engineering-Environmental Management, Inc.
1510 West Canal Court, Suite 2000
Littleton, Colorado 80120

Dear Mr. Savercool,

The U.S. Fish and Wildlife Service (Service) has reviewed the August 2004, Description of Proposed Action and Alternatives for Construction of a Security Perimeter Road and Fence for the Department of Defense, 319th Air Refueling Wing, Grand Forks Air Force Base, North Dakota. The proposed project consists of replacing 4.2 miles of perimeter fence and upgrading the existing perimeter road for its entire length (approximately 9.17 miles). The Service's comments and recommendations are provided under the authority of and in accordance with the requirements of the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) and the Migratory Bird Treaty Act of 1918 (MBTA), as amended, (16 U.S.C. 703 et seq.), National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321-4347), and the Clean Water Act (CWA) (33 U.S.C. §§ 1251-1387).

Several low-water wetland crossings would be constructed as part of the upgrade of the perimeter road. The existing perimeter road is deteriorating, rough, and overgrown with vegetation. Under some weather conditions (snow or heavy rain), the perimeter road becomes impassable, especially where it crosses wetlands. The upgraded wetland crossings would be constructed by removing the existing vegetation, installing a layer of geo-textile fabric, placing a 3-inch layer of crushed rock 1.5 inches in diameter or greater, placing a second layer of geo-textile fabric over the crushed rock, and placing a final 6-inch layer of crushed concrete overlay as the road surface.

The proposed method of constructing the low-water wetland crossings should maintain the wetland hydrology and allow the water in the wetlands to equalize on both sides of the road. However, the Service has concerns about the use of crushed concrete as the road surface material in wetland areas. Crushed concrete can leach pollutants that may be present in the parent material such as heavy metals or PCBs (Sundahl, et al. 1999). If the concrete source is from a highway construction and repair project, it may include crumb rubber asphalt concrete which can contain a mixture of organic and metallic contaminants (Azizian, 2003). In addition, alkaline leachate from the limestone and fine particles of crushed concrete may degrade the water quality of the wetlands. The Service recommends that only clean crushed rock be used for the road surface material to ensure the water quality in the wetlands is maintained.

If construction routes intersect wetlands, streams, or rivers, the Corps of Engineers may required a Section 404 permit. Section 404 of the CWA regulates placement of fill materials in wetlands. I suggest you contaact Mr. Dan Cimarosti, Regulatory Office, Corps of Engineers, 1513 South 12th Street, Bismarck, North Dakota 58504 (701-255-0015), to determine permit requirements.

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. § 703-712), as amended, prohibits the taking, killing, possession, sale, transportation and importation of migratory birds, their eggs, parts and nests, except when specifically authorized by the Secretary of the Interior. The Service, under the authority of and in accordance with the MBTA, provides the following recommendations to minimize project impacts to migratory birds.

- Defer the timing of construction to late summer (after July 15) or fall so as not to disrupt waterfowl or other wildlife during the nesting season.

- Reseed disturbed areas immediately with a mixture of native grass and forb species.

A list of federally endangered and threatened species that may be present within the proposed project's area of influence is enclosed. This list fulfills requirements of the Service under Section 7 of the Endangered Species Act. At this time, I am not aware of any species that frequent the project area.

If a Federal agency authorizes, funds, or carries out a proposed action, the responsible Federal agency, or its delegated agent, is required to evaluate whether the action "may affect" listed species. If the Federal agency determines the action "may affect" listed species, then the responsible Federal agency shall request formal section 7 consultation with this office. If the evaluation shows a "no effect" determination on listed species, further consultation is not necessary. If a private entity receives Federal funding for a construction project, or if any Federal permit is required, the Federal agency may designate the fund recipient or permittee as its agent for purposes of section 7 consultation.

Thank you for the opportunity to comment on this project. If you require further information or the project plans change, please contact Terry Ellsworth of my staff at (701) 250-4481, or at the letterhead address above.

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosure

cc: Project Leader, Devils Lake WMD
(Attn: K. Tompkins)
Corps of Engineers, Regulatory Office, Bismarck
(Attn: D. Cimarosti)
Director, ND Game & Fish Department, Bismarck
(Attn: M. McKenna)

References

Azizian, M. F.; Nelson, P. O.; Thayumanavan, P.; and Williamson, K. J. Environmental impact of highway construction and repair materials on surface and ground waters. Case study: crumb rubber asphalt concrete. Waste Management. 2003; 23(8):719-28.

Sundahl, M.; Sikander, E.; Ek-Olausson, B.; Hjorthage, A.; Rosell, L.; and Tornevall, M. Determinations of PCB within a project to develop cleanup methods for PCB-containing elastic sealant used in outdoor joints between concrete blocks in buildings. Journal of Environmental Monitoring. 1999 Aug; 1(4):383-7.

FEDERAL THREATENED SPECIES
FOUND IN GRAND FORKS COUNTY
NORTH DAKOTA

THREATENED SPECIES

Birds

Bald eagle (Haliaeetus leucocephalus): Migrates spring and fall statewide but primarily along the major river courses. It concentrates along the Missouri River during winter and is known to nest in the floodplain forest.

Mammals

Gray wolf (Canis lupus): Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX D

SPECIES OF CONCERN IN NORTH DAKOTA

APPENDIX D

SPECIES OF CONCERN IN NORTH DAKOTA

Table D contains a list of plant and animal species of concern in North Dakota. Also noted in Table D is the state rank of each species, the breeding habitat for animals and habitat for plants, and the likelihood of each species occurring on Grand Forks AFB.

Table D. North Dakota Animal and Plant Species of Concern

Common Name	Scientific Name	State Rank[1]	Breeding Habitat (Animals)/ Habitat (Plants)	Occurrence at Grand Forks AFB
Birds				
Black tern*	*Chlidonias niger*	S?	Shallow freshwater marshes with emergent vegetation including prairie slough, lake margins, and occasionally on river or island edges.	Lack of breeding habitat on Base.
Upland sandpiper*	*Bartramia longicauda*	S?	Grasslands, especially large blocks.	Habitat present on Base but dominated by non-native vegetation..
Common loon	*Gavia immer*	S4	Freshwater lakes and rivers.	Lack of breeding habitat on Base. Might be occasional transient.
Cooper's hawk*	*Accipiter cooperii*	SU	Brushy, deciduous woodlands, adjoining wood margins along major streams, ravines, and escarpments.	Lack of quality breeding habitat on Base.
Loggerhead Shrike*	*Lanius ludovicianus*	SU	Open country and dry upland prairie where shrubs and small trees occur.	Habitat present on Base but dominated by non-native vegetation..
Eastern bluebird*	*Sialia sialis*	SU	Forest edge, open woodland interspersed with or adjacent to grazed or mowed grassland. Margins of floodplain and upland deciduous forest.	Lack of quality breeding habitat on Base.
Green heron*	*Butroides virescens*	S3	In or near woodland borders of streams, oxbows, ponds, and lakes.	Lack of quality breeding habitat on Base.
Mourning warbler	*Oporornis philaelphia*	S4	Disturbed second growth, prefers clearings, mixed-woods forests, and stands of aspen (Populus tremuloides) and birch (Betula sp.).	Lack of quality breeding habitat on Base. Might be occasional transient.
Northern waterthrush*	*Seiurus noveboracensis*	S4	Brushy bogs, shrub swamps, second-growth swamp forests, and wood borders of ponds, lakes, and streams.	Lack of quality breeding habitat on Base.
Orange-crowned warbler*	*Vermivora celata*	S4	Open woodlands with heavy brush, especially on slopes near water.	Lack of breeding habitat on Base.

Table D. North Dakota Animal and Plant Species of Concern (continued)

Common Name	Scientific Name	State Rank[1]	Breeding Habitat (Animals)/ Habitat (Plants)	Occurrence at Grand Forks AFB
Pileated woodpecker	*Cryocopus pileatus*	S3	Late successional stages of coniferous or deciduous forest, also younger forests that have scattered large, dead trees.	Lack of breeding habitat on Base. Might be occasional transient.
Red-breasted nuthatch*	*Sitta canadensis*	S4	Coniferous and deciduous forest.	Lack of breeding habitat on Base.
Scarlet tanager	*Piranga olivacea*	SU	Rich, mature deciduous forests that occur on slopes of prominent hills and valley bluffs, and on well-drained floodplains of large streams.	Lack of breeding habitat on Base. Might be occasional transient.
Sprague's pipit	*Anthus spragueii*	S3	Mixed grass prairie on uplands.	Habitat present on Base but dominated by non-native vegetation.
Swainson's hawk*	*Buteo swainsoni*	SU	Native prairie or cropland that include thickets of natural tree growth or brush margins of native forested tracts.	Lack of quality breeding habitat on Base.
Ferruginous hawk*	*Buteo regalis*	SU	Flat and rolling prairie, grasslands, sagebrush.	Habitat present on Base but dominated by non-native vegetation.
Baird's sparrow*	*Ammodramus bairdii*	SU	Upland prairies of mixed grass prairie or tall grass habitat types.	Habitat present on Base but dominated by non-native vegetation.
LeConte's Sparrow*	*Ammodramus leconteii*	SU	Fens, lowland tracts of tall grass prairie, and wet meadows.	Lack of quality breeding habitat on Base.
Nelson's sharp-tailed sparrow*	*Ammodramus nelsoni*	SU	Freshwater prairie marshes and meadows.	Lack of quality breeding habitat on Base.
Whip-poor-will	*Caprimulgus vociferous*	SH	Woods, especially near fields.	Lack of quality breeding habitat on Base. Might be occasional transient.
Yellow rail	*Coturnicops noveboracensis*	S2	Sedge meadows and grassy marshes.	Lack of quality breeding habitat on Base. Might be occasional transient.
Mammals				
Common gray fox	*Urocyon cinereoargenteus*	SU	Brushy vegetation associated with rugged broken terrain.	Lack of breeding habitat on Base. Might be occasional transient.
Pygmy shrew	*Sorex hoyi*	SU	Little known of habitat selection – documented as occurring near wetland areas adjacent to forested tracts.	Lack of quality breeding habitat on Base. Might be occasional transient

Table D. North Dakota Animal and Plant Species of Concern (continued)

Common Name	Scientific Name	State Rank[1]	Breeding Habitat (Animals)/ Habitat (Plants)	Occurrence at Grand Forks AFB
Fish				
Central stoneroller	*Campostoma anomalum*	S3	Small rivers and creeks with gravel or bedrock riffles.	Unlikely to occur due to degradation of potential habitat in the Turtle River near the Base.
Finescale dace	*Phoxinus neogaeus*	SU	Cool bog lakes, streams, and some larger lakes. Might be found in beaver (Castor canadensis) ponds.	Unlikely to occur due to degradation of potential habitat in the Turtle River near the Base.
Hornyhead chub	*Nocomis biguttatus*	S3	Clear streams with permanent flow.	Unlikely to occur due to degradation of potential habitat in the Turtle River near the Base.
Northern redbelly dace	*Phoxinus eos*	S4	Slow-flowing creeks with clear water and vegetation.	Unlikely to occur due to degradation of potential habitat in the Turtle River near the Base.
Pugnose shiner	*Notropis anogenus*	S1	Clear, moderately flowing waters with aquatic vegetation.	Unlikely to occur due to degradation of potential habitat in the Turtle River near the Base.
Rosyface shiner	*Notropis rubellus*	S3	Medium-sized streams in shallow water over gravel.	Unlikely to occur due to degradation of potential habitat in the Turtle River near the Base.
Mussels				
Black sandshell mussel	*Ligumia recta*	S4	Large permanent streams.	Unlikely to occur due to lack of breeding habitat on Base.
Mapleleaf mussel	*Quadrula quadrula*	S3	Large permanent streams.	Unlikely to occur due to lack of breeding habitat on Base.
Pink heelsplitter mussel	*Potamilus alatus*	S4	Large permanent streams.	Unlikely to occur due to lack of breeding habitat on Base.
Plants[2]				
Dotted smartweed	*Polygonum punctatum*	S2S3	Swampy thickets, river banks, wet meadows.	Does not occur on Base.
Downy hawthorn	*Crataegus mollis*	S1	Open mesic woods.	Does not occur on Base.
Drummond's milkvetch	*Astragalus drommondii*	S1	Open or wooded hillsides, ravines.	Does not occur on Base.

Table D. North Dakota Animal and Plant Species of Concern (continued)

Common Name	Scientific Name	State Rank[1]	Breeding Habitat (Animals)/ Habitat (Plants)	Occurrence at Grand Forks AFB
Dutchman's breeches	*Dicentra cucullaria*	S1	Rich eastern woodlands.	Does not occur on Base.
Dwarf spikerush	*Eleocharis parvula*	S1S2	Brackish or alkaline shores.	Does not occur on Base.
Green woodland orchid	*Platanthera clavellata*	SH	Swampy woods, bogs.	Does not occur on Base.
Hooked crowfoot	*Ranunculus recurvatus*	S1	Wooded ravines, swampy woods.	Does not occur on Base.
Lesser-panicled sedge	*Carex diandra*	S2S3	Swamps, meadows, shores.	Does not occur on Base.
Northern lady-fern	*Athyrium filix-femina*	S3	Moist woods, thickets, bogs, along streams.	Does not occur on Base.
Prickly gooseberry	*Ribes cynosbati*	S3	Moist rich woods.	Does not occur on Base.
Purple cinquefoil	*Potentilla palustris*	S2	Fens, wet meadows, bogs.	Does not occur on Base.
Rose pogonia	*Pogonia ophioglossoides*	SH	Bogs, swampy woods.	Does not occur on Base.
Sheathed pondweed	*Potamogeton vaginatus*	S3	Usually deep cold lakes, ponds.	Does not occur on Base.
Small yellow lady's slipper*	*Cypripedium parvaflorum*	S2S3	Damp woods, fens, stream banks.	Small population documented on Base in 2004.
Torrey's cryptantha	*Cryptantha torreyana*	S1	Butte slopes, on scoria.	Does not occur on Base.
White lady's-slipper	*Cypripedium candidum*	S2S3	Low prairie, wet meadows.	Does not occur on Base.
Wiregrass sedge	*Carex lasiocarpa*	S3	Sphagnum bogs, seepage-fed peatlands, lake borders.	Does not occur on Base.
Yellow monkeyflower	*Mimulus guttalus*	S1	Marshes, along streams and lake shores.	Does not occur on Base.

Sources: Dirk 2003a, Dirk 2003b

[1]State Rank Definitions:

SH – Possibly extirpated
SU – Unrankable (due to lack of/conflicting information)
S1 – Critically imperiled
S2 – Imperiled
S3 – Vulnerable
S4 – Apparently secure
S? – Not Ranked/Under Review

[2]Occurrence information from 319 CES/CEV 2004, GFAFB 2004.

[*]Observed at Grand Forks AFB

References for Table D

Dirk 2003a — Dirk, C.N.G. 2003. North Dakota Animal Species of Concern. [Unpublished list]. North Dakota Natural Heritage Program, Bismarck. Last updated December 2003.

Dirk 2003b — Dirk, C.N.G. 2003. North Dakota Plant Species of Concern. [Unpublished list]. North Dakota Natural Heritage Program, Bismarck. Last updated December 2003.

THIS PAGE INTENTIONALLY LEFT BLANK